GE Consumer & Industrial Appliances

Service Manual & Installation Manual

Split System Air Conditioner

Model numbers:

GE AIR F24

GE AIR F34

GE AIR F41

IMPORTANT SAFETY NOTICE

The information in this service guide is intended for use by individuals possessing adequate backgrounds of electrical, electronic, and mechanical experience. Any attempt to repair a major appliance may result in personal injury and property damage. The manufacturer or seller cannot be responsible for the interpretation of this information, nor can it assume any liability in connection with its use.

WARNING

To avoid personal injury, disconnect power before servicing this product. If electrical power is required for diagnosis or test purposes, disconnect the power immediately after performing the necessary checks.

RECONNECT ALL GROUNDING DEVICES

If grounding wires, screws, straps, clips, nuts, or washers used to complete a path to ground are removed for service, they must be returned to their original position and properly fastened.

GE Consumer & Industrial
Technical Service Guide

1. Precautions

1. Warning: Prior to repair, disconnect the power cord from the circuit breaker.

2. Use proper parts: Use only exact replacement parts. (Also, we recommend replacing parts rather than repairing them.)

3. Use the proper tools: Use the proper tools and test equipment, and know how to use them. Using defective tools or test equipment may cause problems later-intermittent contact, for example.

4. Power Cord: Prior to repair, check the power cord and replace it if necessary.

5. Avoid using an extension cord, and avoid tapping into a power cord. This practice may result in malfunction or fire.

6. After completing repairs and reassembly, check the insulation resistance.
   Procedure: Prior to applying power, measure the resistance between the power cord and the ground terminal. The resistance must be greater than 30 megaohms.

7. Make sure that the grounds are adequate.

8. Make sure that the installation conditions are satisfactory.
   Relocate the unit if necessary.

9. Keep children away from the unit while it is being repaired.

10. Be sure to clean the unit and its surrounding area.

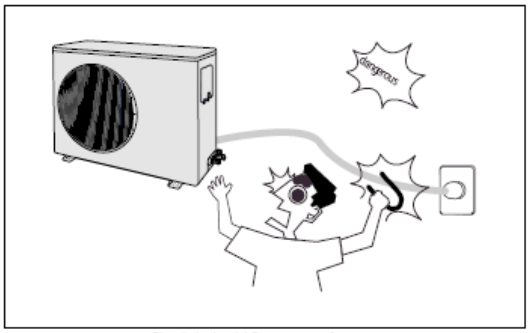


Fig. 1-1 Avoid Dangerous Contact

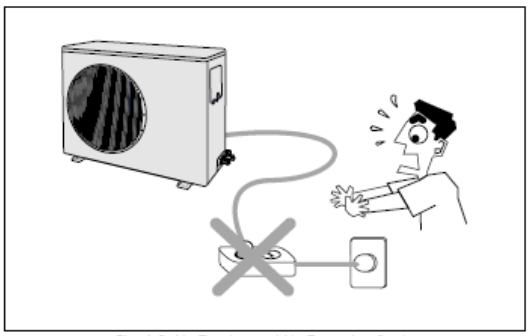


Fig. 1-2 No Tapping and No Extension Cords

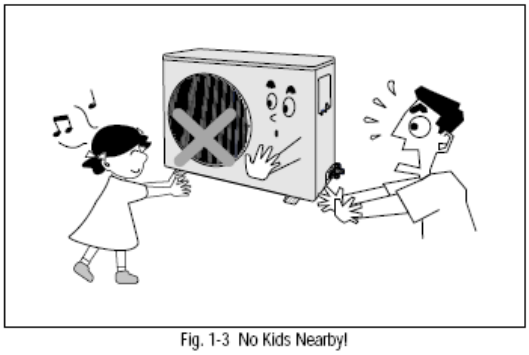


Fig. 1-3 No Kids Nearby!

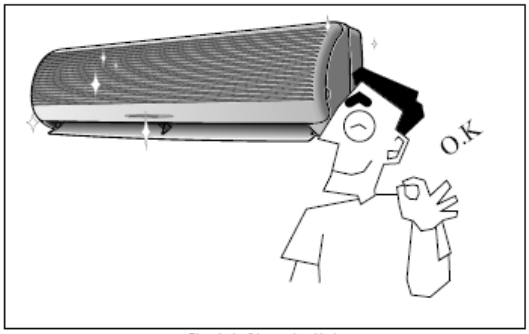


Fig. 1-4 Clean the Unit

1 Introduction and Features

Model	Remarks
GE AIR F24	1PH 230V 50Hz R407C

Model	Remarks
GE AIR F34	3PH 400V 50Hz R407C

Model	Remarks
GE AIR F41	3PH 400V 50Hz R407C

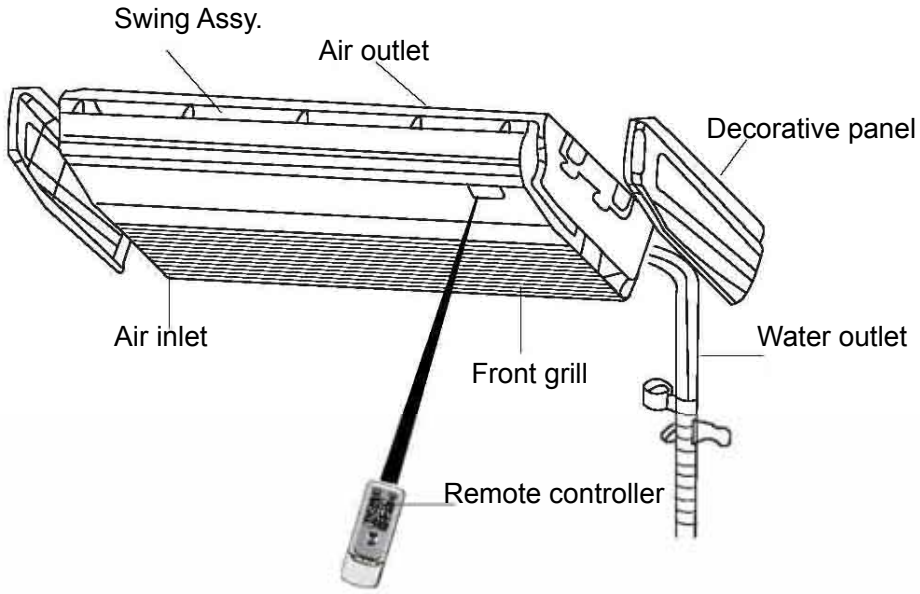
Model				GE AIR F24	
Function				Cooling	Heating
Power (Phase-Frequency-Voltage)				1Ph 50Hz 230V	
Total Capacity			(W)	7000	8500
Rated power			(W)	3000	3050
Rated current			(A)	14.6	15.1
Air flow volume			(m^3/h)	1170	
Dehumidify volume			(L/h)	2.3	
C.O.P/EER			(W/W)	2.3	2.79
Indoor unit	Model			GE AIR F24 IN	
	Fan motor speed (r/min) (H/M/L)			1360/1280/1240	
	Output power of motor(W)			100	
	Fan type-piece			Centrifugal Fan-4	
	Diameter-length (mm)			ф125×134	
	Evaporator			Aluminum fin-copper tube	
	Pipe diameter			ф7	
	Row-fin distance (mm)			3-1.6	
	Extended area of heat exchange (I×H×L)			1.042×0.19	
	Swing motor model			MP35CA	
	Power of motor (W)			4	
	Fuse (A)			PCB5A Transformer 0.2A	
	Sound (pressure level) dB(A)			≤47	
	Dimension (W/D/H) (mm)			1300×188×600	
	Dimension of package (W/D/H) (mm)			1414×248×724	
	Net weight/gross weight (kg)			32/36	
Outdoor Unit	Model			GE AIR F24 OUT	
	Input Power			2900	2950
	Running Current			14.2	14.7
	Compressor Model			C-RN220H5B	
	Compressor Type			Rotary Type	
	LRA(A)			75	
	Compressor Overload Protector Type			Internal Inherent Protector	
	Throttle Method			Capillary	
	Starting Method			Capacitor	
	Range of working temperature(℃)			7℃≤T≤43℃	
	Condenser			Aluminum fin-copper tube	
	Pipe diameter			ф9.52	
	Row-fin distance (mm)			2-1.8	
	Extended area of heat exchange (I×H×L)mm			725×813	
	Fan motor speed (rpm)			60/780	
	Fan type-piece			Axial Flow Fan-1	
	Fan Diameter (mm)			Φ450	
	Defrosting Method			Auto	
	Sound (pressure level) dB(A)			≤58	
	Dimension (W/D/H) (mm)			950×412×840	
	Dimension of package (W/D/H) (mm)			1100×450×920	
	Net weight/gross weight (kg)			75/87	
	Refrigerant/Refrigerant Charge (kg)			R407C/2.5	
Connecting Pipe	Length			5	
	Outer Diameter	Liquid Pipe	(mm)	Φ9.52(3/8”)	
		Gas Pipe	(mm)	Φ 16(5/8”)	
	Max. Distance	Height	(m)	5	
		Length	(m)	10	

Model				GE AIR F34		GE AIR F41	
Function				Cooling	Heating	Cooling	Heating
Power (Phase-Frequency-Voltage)				3Ph - 400V - 50Hz		3Ph - 400V - 50Hz	
Total Capacity		(W)		10000	11500	12000	13000
Rated power		(W)		4400	4400	5000	4600
Rated current		(A)		7.5	7.5	8.3	7.8
Air flow volume		(m^3/h)		2100		2200	
Dehumidify volume		(L/h)		2.6		3.4	
C.O.P/EER		(W/W)		2.27	2.61	2.4	2.83
Indoor unit	Model			GE AIR F34 IN		GE AIR F41 IN	
	Fan motor speed (r/min) (H/M/L)			1140/1070/980		1110/1000/900	
	Output power of motor(W)			150		150	
	Fan type-piece			Centrifugal Fan-4		Centrifugal Fan-4	
	Diameter-length (mm)			ф145×175		ф155×175	
	Evaporator			Aluminum fin-copper tube		Aluminum fin-copper tube	
	Pipe diameter			ф7		ф7	
	Row-fin distance (mm)			3-1.6		3-1.6	
	Extended area of heat exchange (I×H×L)			1.34×0.25		1.34×0.25	
	Swing motor model			MP35CA		MP35CA	
	Power of motor (W)			4		4	
	Fuse (A)			PCB5A Transformer 0.2A		PCB5A Transformer 0.2A	
	Sound (pressure level) dB(A)			≤52		≤55	
	Dimension (W/D/H) (mm)			1590×238×695		1590×238×695	
	Dimension of package (W/D/H) (mm)			1770×330×830		1714×330×830	
	Net weight/gross weight (kg)			42/53		42/51	
Outdoor Unit	Model			GE AIR F34 OUT		GE AIR F41 OUT	
	Compressor Model			C-SBN303H8A		C-SBN353H8A	
	Input Power			4250	4250	4850	4450
	Running Current			6.9	7	7.6	7.1
	Compressor Type			Rotary Type		Rotary Type	
	LRA(A)			42		55	
	Compressor Overload Protector Type			Internal Inherent Protector		Internal Inherent Protector	
	Throttle Method			Capillary		Capillary	
	Starting Method			Capacitor		Capacitor	
	Range of working temperature(℃)			2℃≤T≤43℃		2℃≤T≤43℃	
	Condenser			Aluminum fin-copper tube		Aluminum fin-copper tube	
	Pipe diameter			ф9.52		ф9.52	
	Row-fin distance (mm)			2-1.4		2-1.8	
	Working Area mm^2			813×930		725×1218	
	Fan motor speed (rpm)			920		840	
	Fan type-piece			Axial Flow Fan-1		Axial Flow Fan-2	
	Fan Diameter (mm)			Φ482		Φ450	
	Defrosting Method			Auto		Auto	
	Sound (pressure level) dB(A)			≤62		≤63	
	Dimension (W/D/H) (mm)			1040×410×840		1250×950×412	
	Dimension of package (W/D/H) (mm)			1100×450×880		1295×1110×450	
	Net weight/gross weight (kg)			90/105		112/133	
	Refrigerant/Refrigerant Charge (kg)			R407C/3.1		R407C/3.4	
Connecting Pipe	Length			5		5	
	Outer Diameter	Liquid Pipe	(mm)	Φ12(1/2")		Φ12(1/2")	
		Gas Pipe	(mm)	ф19(3/4")		ф19(3/4")	
	Max. Distance	Height	(m)	5		5	
		Length	(m)	10		10	

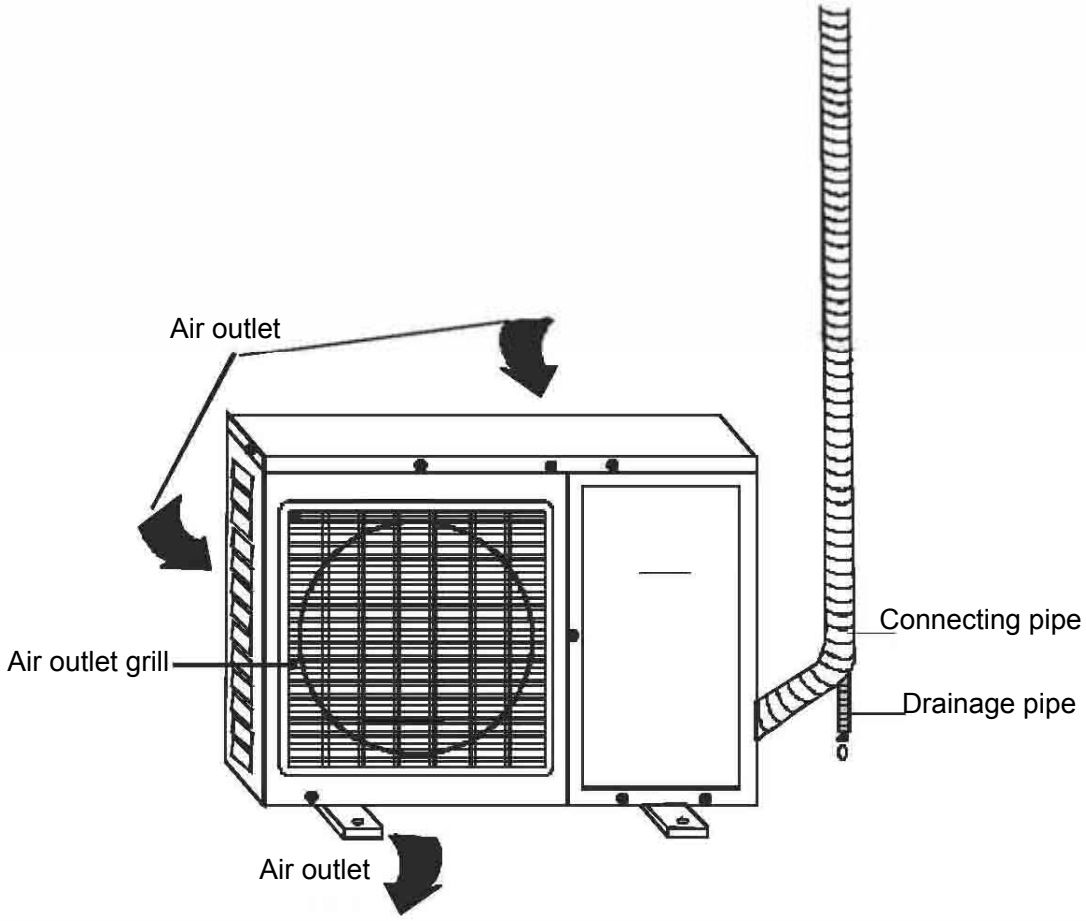
3 Component Name

Applicable to GE AIR F24/ GE AIR F34

Indoor unit

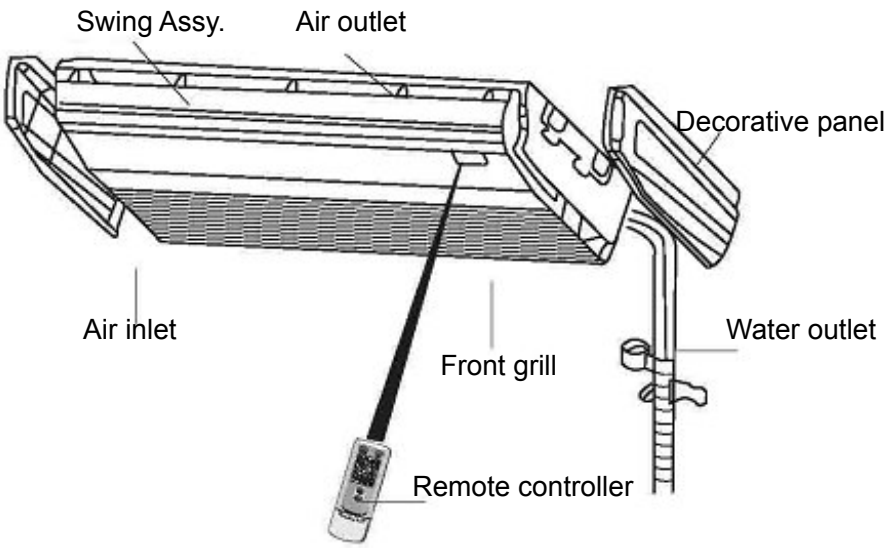


Outdoor Unit

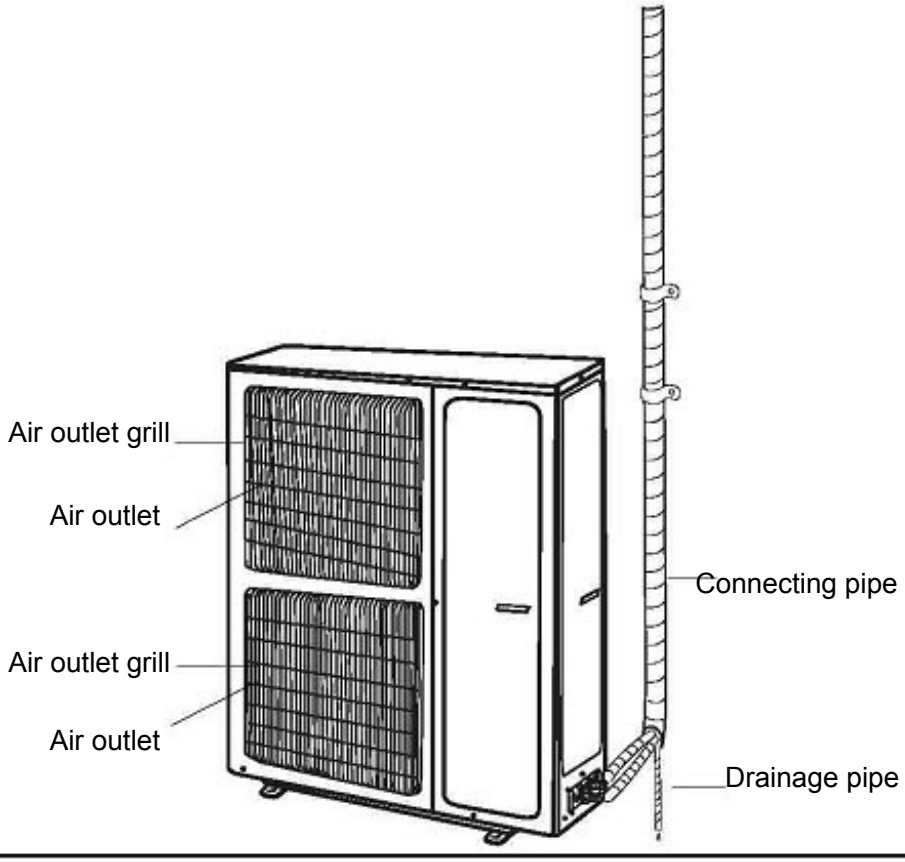


Applicable to GE AIR F41

Indoor unit



Outdoor Unit

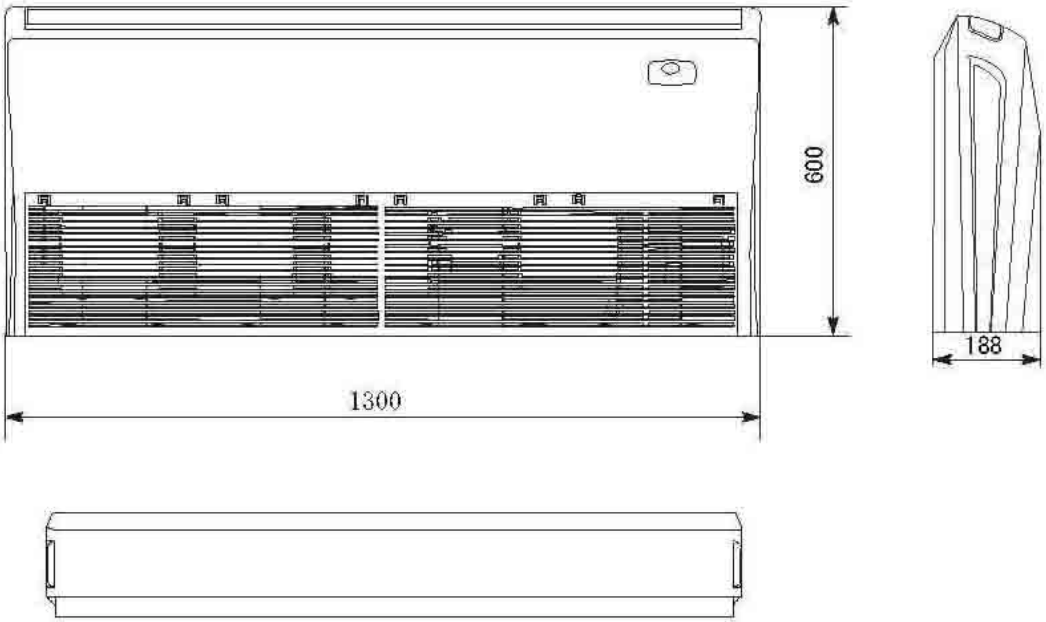


4 Overall and Installing Dimension

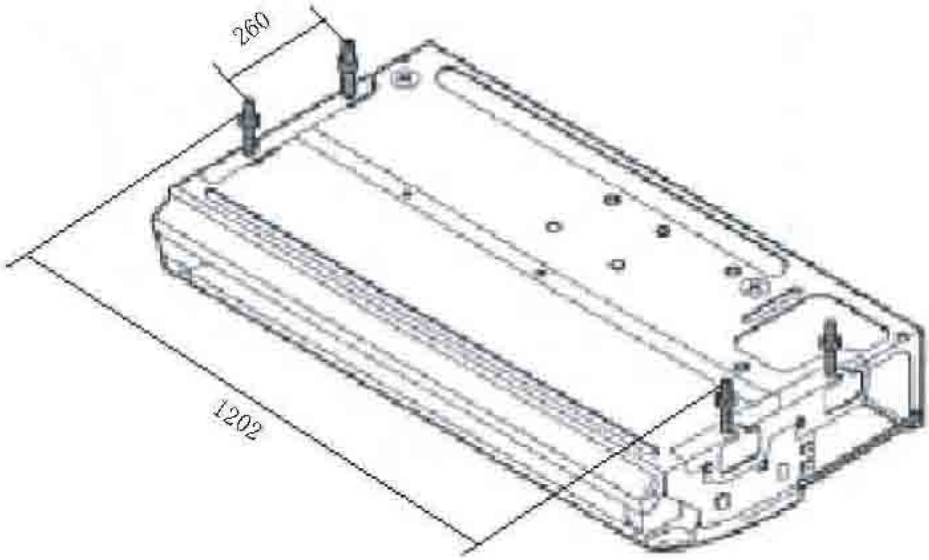
4.1 Overall and Installing Dimension of Indoor Unit

Applicable to GE AIR F24 IN

Overall dimension

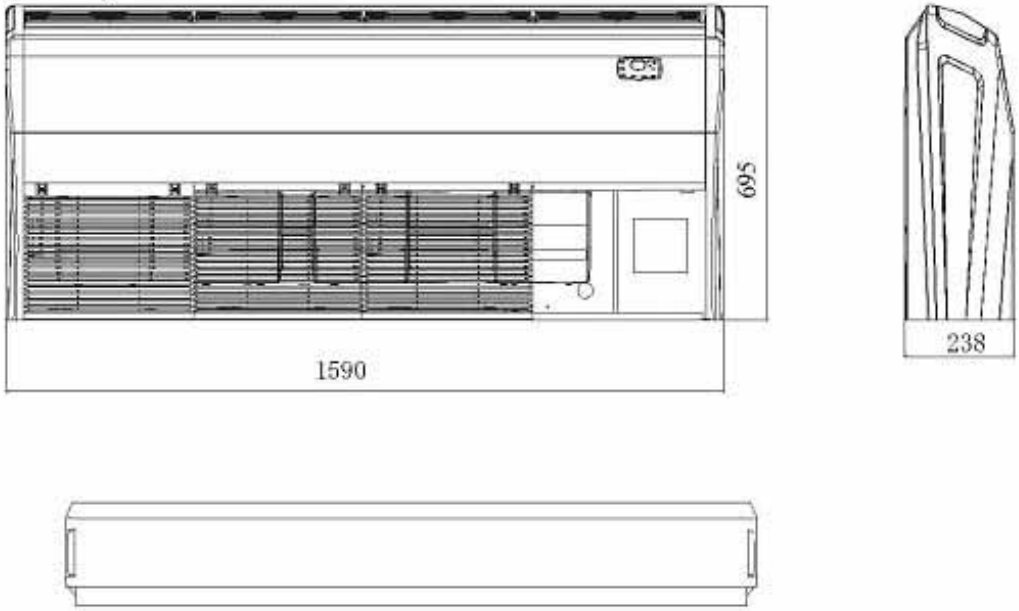


Installing dimension

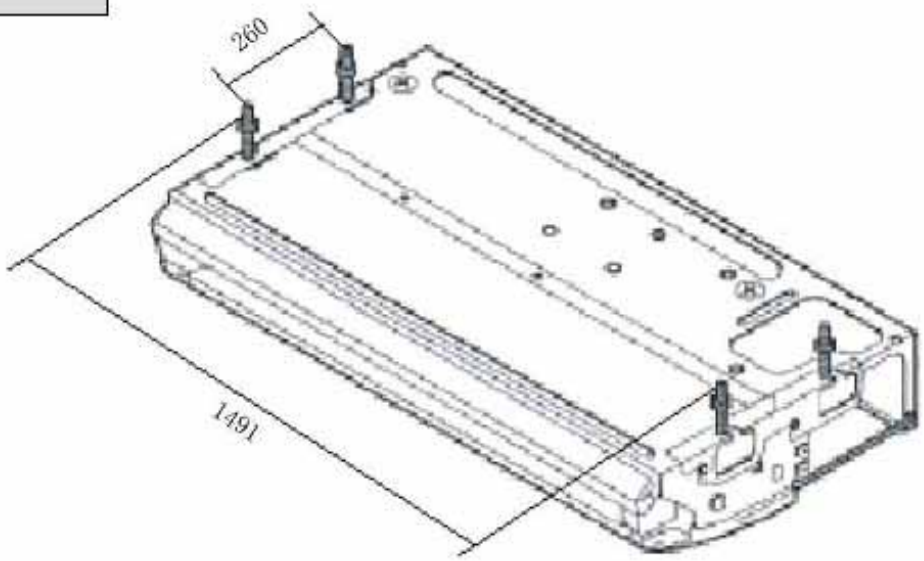


Applicable to GE AIR F34 IN/ GE AIR F41 IN

Overall

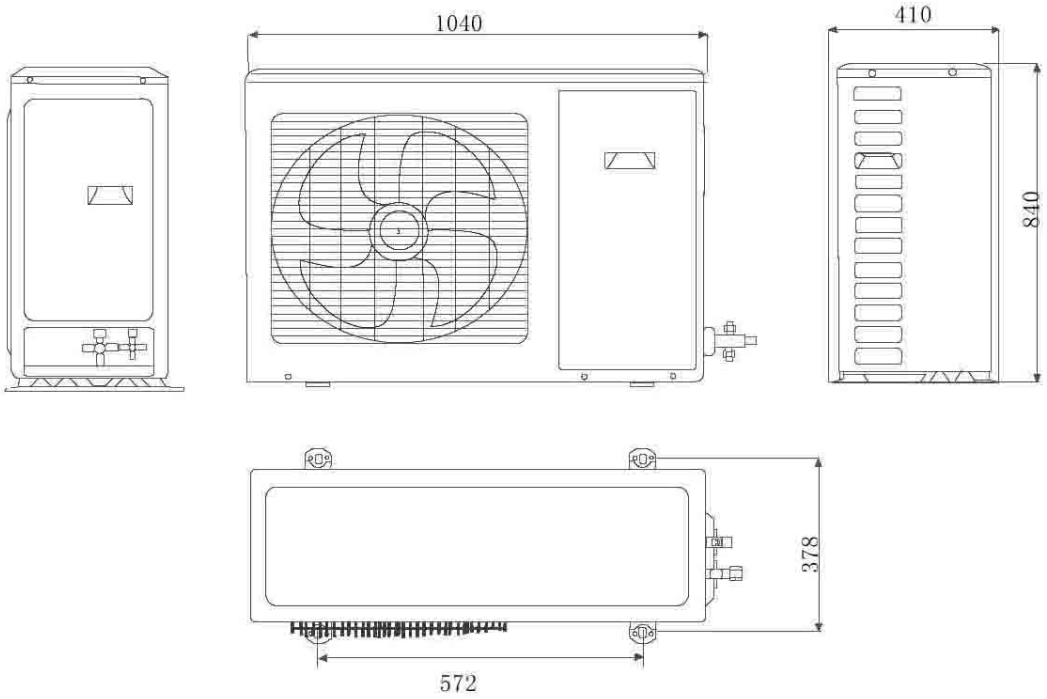


Installing

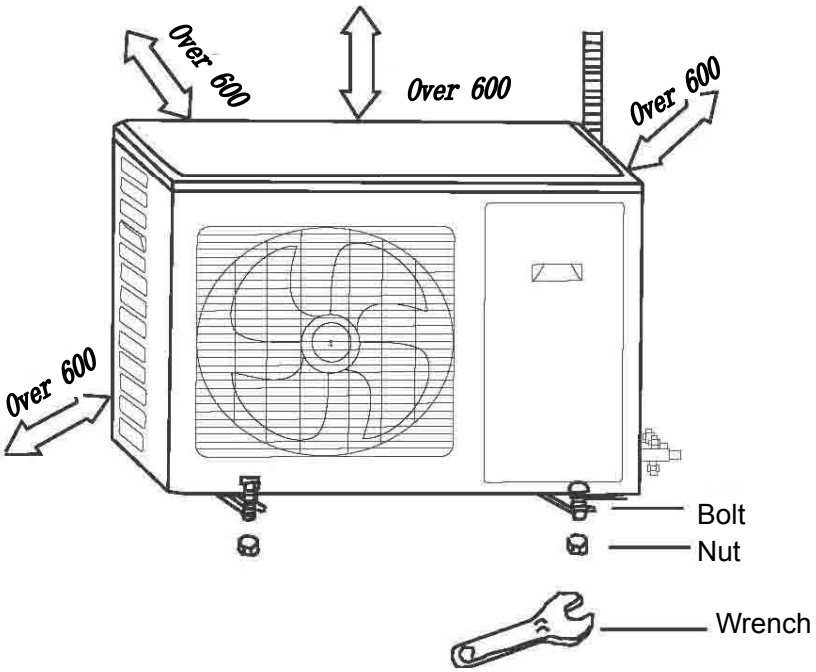


4. 2 Overall and Installing Dimension of Outdoor Unit

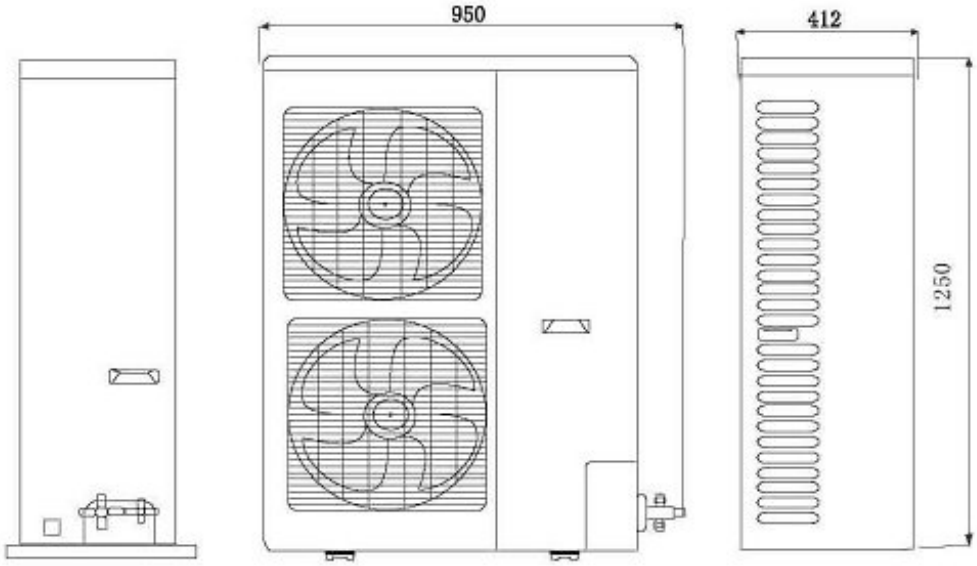
Applicable to GE AIR F24 OUT/ GE AIR F34 OUT



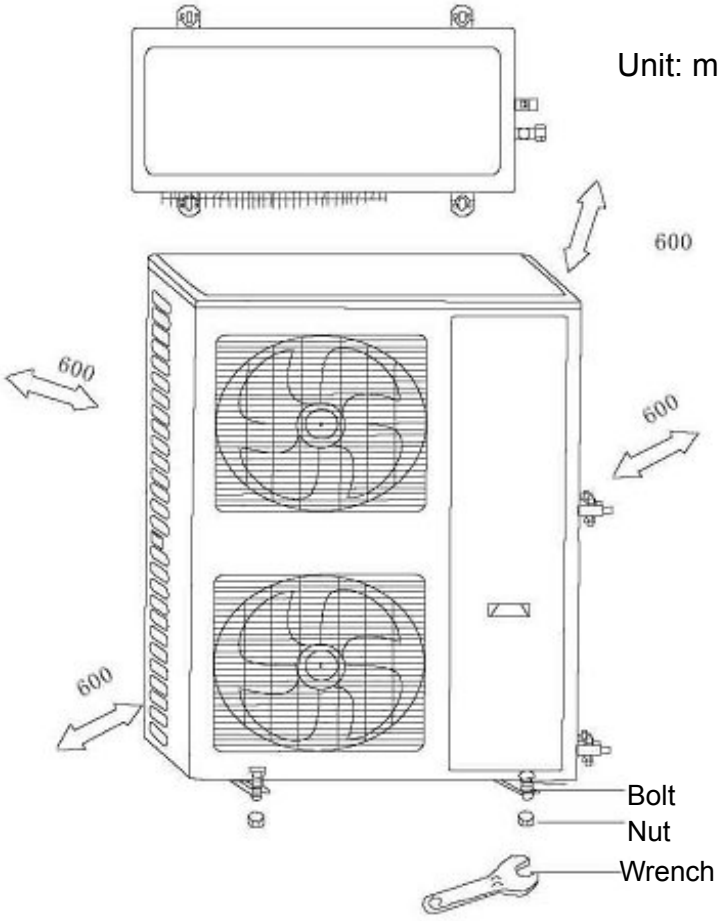
Unit: mm



Applicable to GE AIR F41 OUT

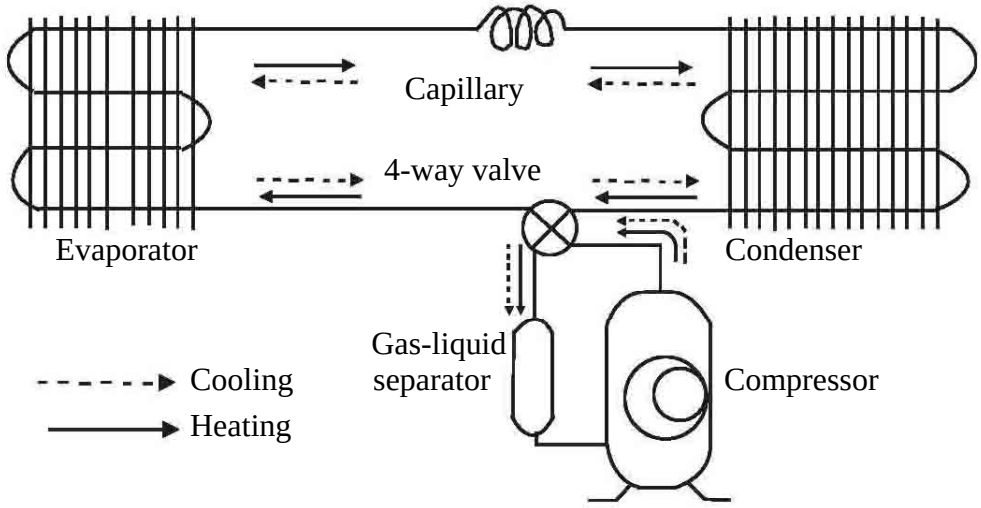


Unit: mm



5 System Diagram

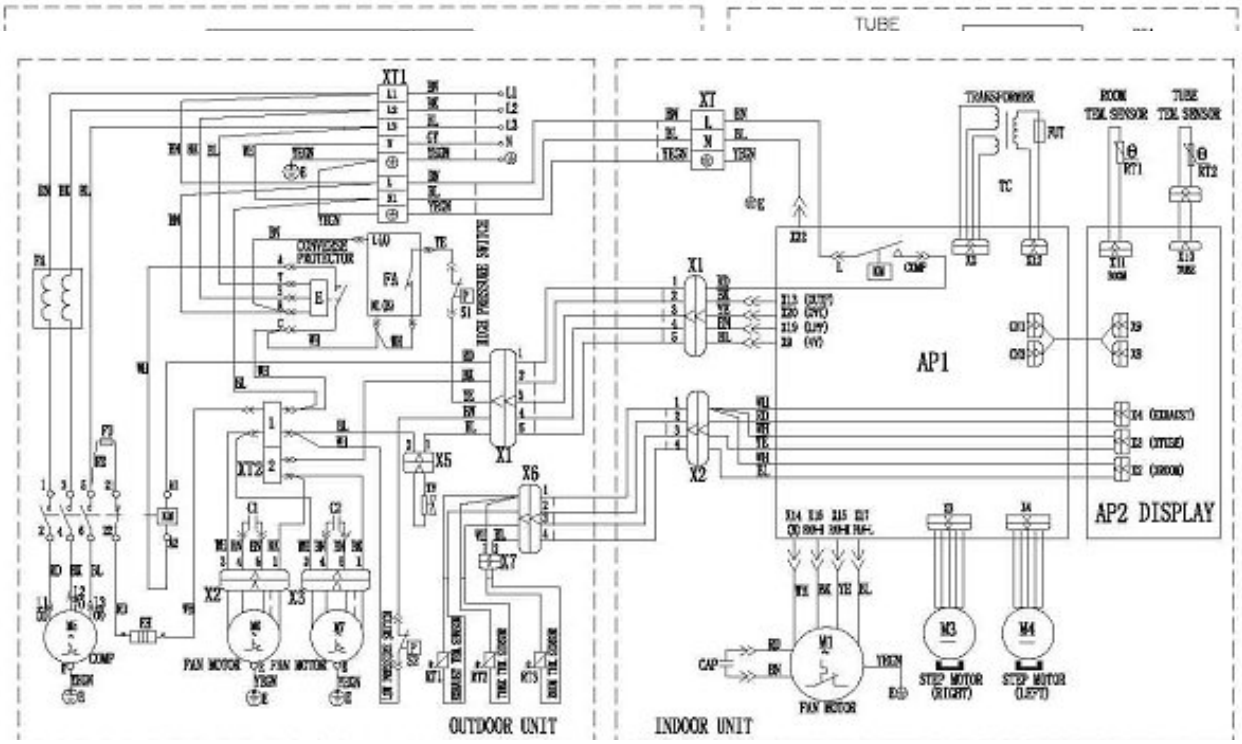
5.1 System Diagram for Cooling-and-Heating Unit

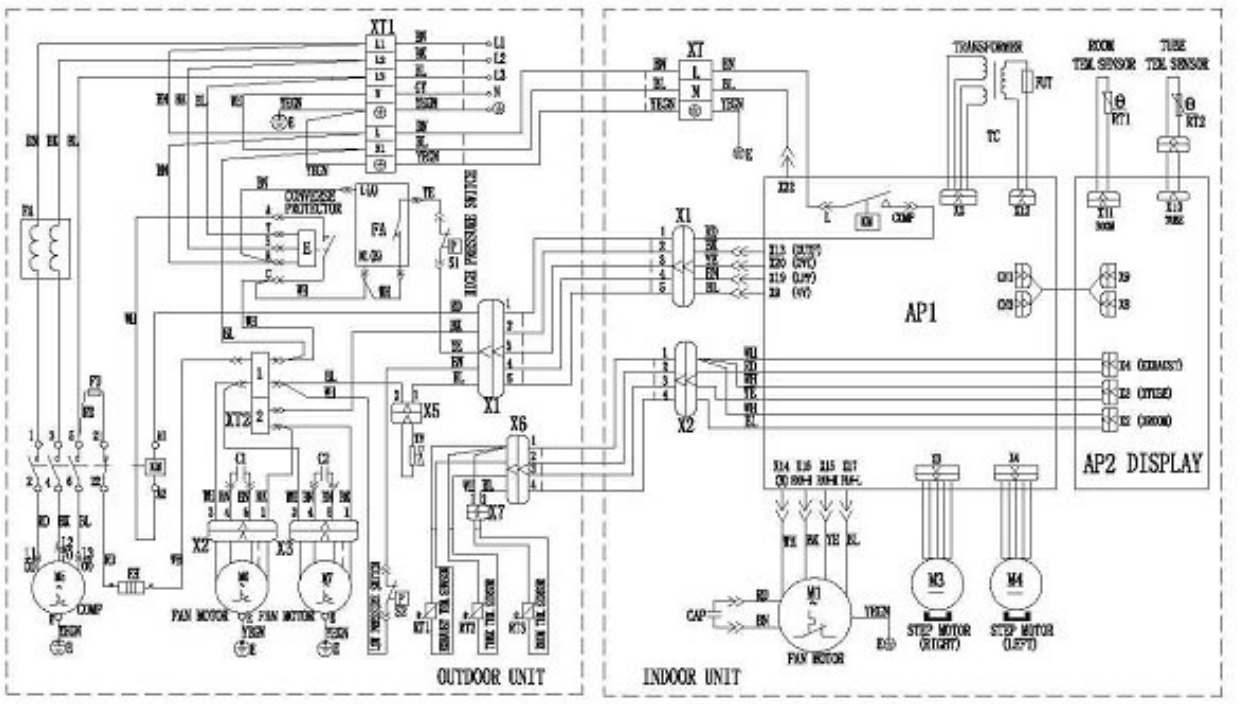


Switch on the power to start the unit. Low-pressure refrigerant vapor from evaporator is absorbed into the compressor, where it is compressed into high-temp. and high-pressure gas. The gas refrigerant is then diverted to condenser, where it is liquidized after heat exchange with outdoor air. After that, the liquidized refrigerant flows through capillary for decrease of temperature and pressure and then enters into evaporator, where it becomes low-temp. and low-pressure refrigerant vapor after heat exchange with indoor air to be regulated. This process is repeated in cycle to achieve the purpose of cooling. (Under heating mode, the 4-way valve will change the flow of refrigerant, so that the condenser absorbs heats and the evaporator gives out heats, thus to achieve the purpose of heating).

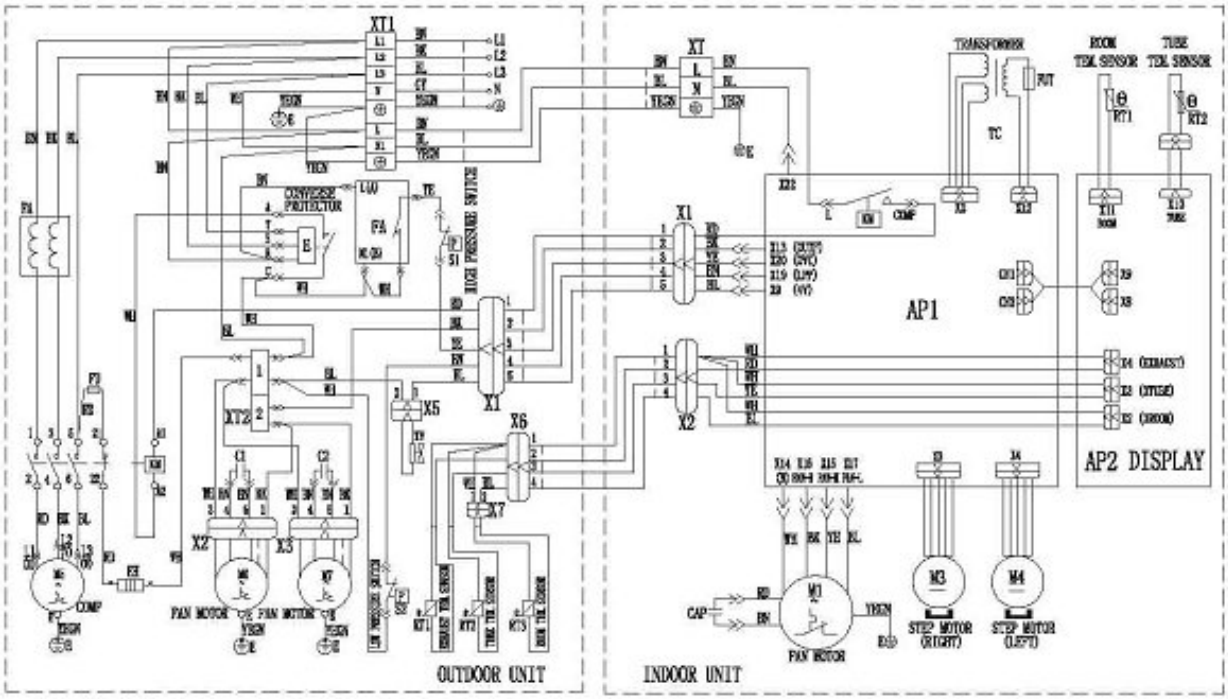
⑥Electrical Diagram

GE AIR F24





GE AIR F41



In case of any change in the Electrical Diagram shown above, please follow the drawing on cabinet.

7 Controller and Remote Controller Function Manual and Operating Instructions

7.1 Controller and Remote Controller Function Manual

7.1.1 Temperature Parameters

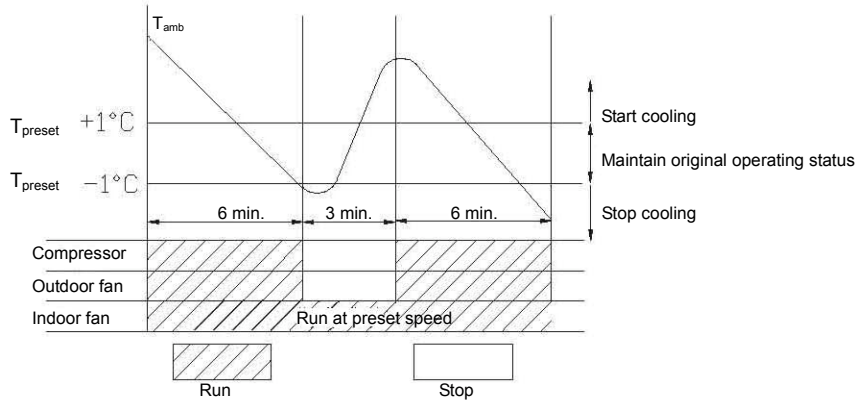
- Indoor preset temperature (T_{preset})
- Indoor ambient temperature ($T_{amb.}$)
- Outdoor condenser temperature ($T_{cond.}$)

7.1.2 Basic Functions

Once started under any mode, the compressor will not be stopped within 6 minutes with the change of ambient temperature. Once stopped, it cannot be restarted unless after 3-minute lag.

7.1.2.1 Cooling Mode

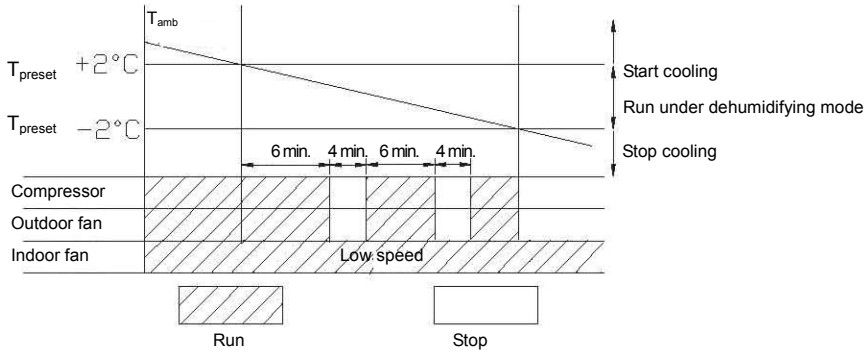
- When $T_{amb.} \geq T_{preset}+1℃$, the unit will run under cooling mode, in which case the compressor and outdoor fan will be started, the indoor fan will run at preset speed and the swing will run as preset.
- When $T_{amb.} \leq T_{preset}-1℃$, the compressor and outdoor fan will be stopped and the indoor fan will run at preset speed.
- When $T_{preset}-1℃ < T_{amb.} < T_{preset}+1℃$, the unit will maintain its original operating status.
- Under cooling mode, the temperature can be set within a range from 16 to 30℃. The initial value is 25℃.



7.1.2.2 Dehumidifying Mode

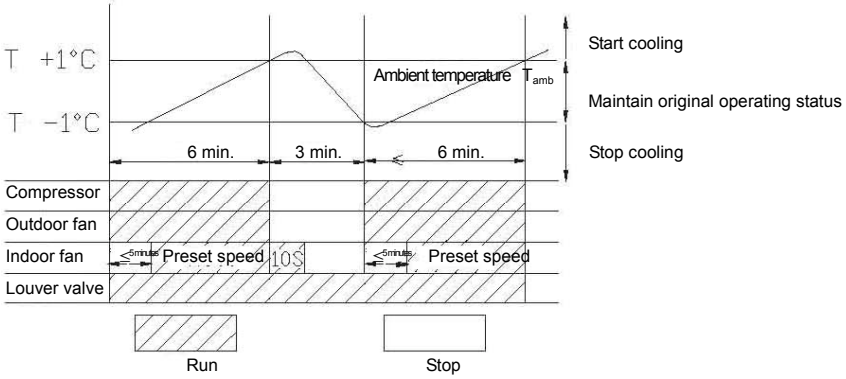
- When $T_{amb.} \geq T_{preset}+2℃$, the unit will run under cooling mode, in which case the compressor and outdoor fan will be started, the indoor fan will run at low speed.
- When $T_{preset}-2℃ \leq T_{amb.} \leq T_{preset}+2℃$, the compressor, indoor unit and outdoor unit will run 6 minutes and stop 4 minutes in repeated cycle, while the indoor fan will run at low speed.
- When $T_{amb.} < T_{preset}-2℃$, the compressor and outdoor fan will be stopped, and the indoor ran will keep running at low speed.

➢ Under dehumidifying mode, the temperature can be set within a range from 16 to 30℃. The initial value is 25℃.



7.1.2.3 Heating Mode

- When $T_{amb.} \leq T_{preset}$ -1℃, the unit will run under heating mode, in which case the 4-way valve, compressor and outdoor fan will be started, while the indoor fan will run at preset speed under preset cold air prevention condition.
- If $T_{amb.} \geq T_{preset}$ +1℃, the compressor and outdoor fan will be stopped, the 4-way valve is still energized and the indoor fan will run at low speed for 10 seconds before it is stopped.
- When T_{preset} -1℃<$T_{amb.}$< T_{preset} +1℃, the unit will maintain its original operating status.
  - Under heating mode, the temperature can be set within a range from 16 to 30℃. The initial value is 25℃.
  - If the unit is switched off under heating mode or switched to another mode, the 4-way valve will be de-energized 2 minutes after the compressor is stopped.

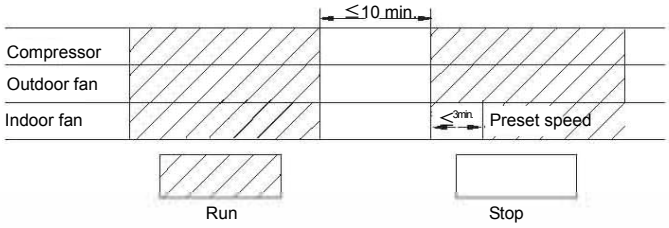


7.1.2.3.1 Cold Air Prevention Condition

The compressor will start at heat mode, indoor fan will not operate. After 5Min or if the outlet temperature is high, the indoor fan will run at preset speed. The indoor fan will no longer be stopped once it is started. Once running at preset speed, it will be impossible to change the speed of the indoor fan.

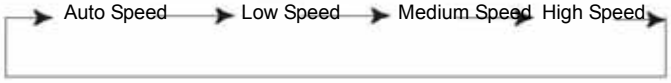
7.1.2.3.2 Defrosting Conditions

- When the condenser is detected to have frost, the system will enter into defrosting mode, in which case the 4-way valve, indoor fan and outdoor fan will be stopped.
- When it is detected that the frost in condenser is completely eliminated, the 4-way valve and outdoor fan will be started simultaneously, while the indoor fan will start to run under preset cold air prevention condition.



7.1.2.4 Fan Mode

Indoor fan will run at preset speed



The temperature can be set within a range from 16 to 30℃. The initial value is 25℃.

7.1.2.5 Auto Mode

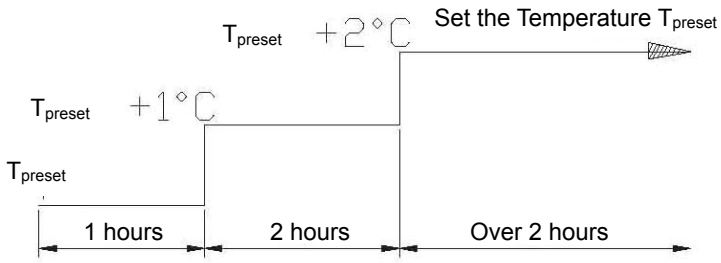
Under this mode, the system will automatically select its run mode (cooling, dehumidifying, heating or fan) depending on ambient temperature.

- Once a mode is started, the unit will run at least 30 seconds before it can run the status of auto mode depending on ambient temperature.

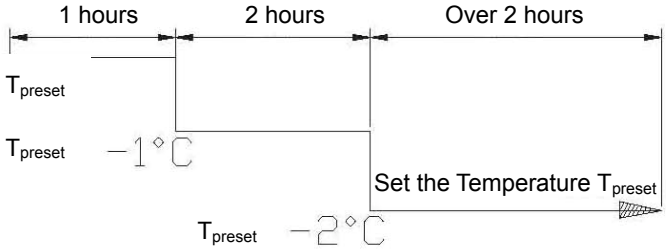
7.1.3 AUTO ON/OFF and Sleep Function

7.1.3.1 Sleep

- If the controller is under cooling or dehumidifying mode, the preset temperature will be increased by 1℃ one hour after running under sleep mode and will be increased by another 1℃ after two hours. The temperature will increased by 2℃ within two hours. After that, the unit will run at this temperature.



◆ If the controller is under heating mode, the preset temperature will be decreased by 1℃ one hour after running under sleep mode and will be decreased by another 1℃ after two hours. The temperature will decreased by 2℃ within two hours. After that, the unit will run at this temperature.



◆ No sleep function under fan mode or auto mode.

7.1.3.2 AUTO ON

◆ You can set AUTO ON function when the unit is under standby status. Upon the time of AUTO ON, the controller will run under preset mode. The time interval for AUTO ON is 0.5h, and can be set within 0.5 - 24 hours.

7.1.3.3 AUTO OFF

◆ You can set AUTO OFF function when the unit is under ON status. Upon the time of AUTO OFF< the system will be switched off. The time interval for AUTO OFF is 0.5h, and can be set within 0.5 - 24 hours.

7.1.4 Other Control

7.1.4.1 Swing Control

You can switch on or off the swing by pressing the SWING key. The swing is valid only when the indoor fan is running.

7.1.4.2 Buzzer Control

When the controller is energized or receives valid key-press signal, the buzzer will give a beep.

7.1.4.3 Automatic Control of Indoor Fan Speed

Under this mode, the indoor fan will automatically select its speed, i.e. high, medium or low, depending on ambient temperature. Once a speed is activated, the indoor fan will run at least 30 seconds before it can switch over to other conditions.

7.1.5 Protection

7.1.5.1 Indoor Antifreeze Protection

◆ If E2 is displayed under cooling mode, the compressor, outdoor fan and indoor fan will be stopped, and the swing motor will maintain its original status. When evaporator temperature is higher than 6℃ and the compressor has been stopped for 4 minutes, the display will resume and the controller will run under preset mode.

◆ Under dehumidifying mode (i.e. run 6 minutes and stop 4 minutes), if it is detected within 3 minutes successively that the tube temperature is lower than -2℃ after the compressor has been running for 3 minutes, the compressor and outdoor unit will be stopped, the indoor fan will run at low speed, and E2 will be displayed. When tube temperature is higher than 6℃ and the compressor has been stopped for 4 minutes, the display will resume and the controller will run under preset mode.

7.1.5.2 Compressor High-pressure Protection

If high-pressure protection is detected within 3 seconds successively, all loads will be closed, all key-press and remote control signals will be shielded, and E1 will be displayed. When it is detected within 6 seconds successively that the compressor has released high-pressure protection, shielding of key-press signal will be removed but E1 will be still displayed. To clear off E1 display, you have to press ON/OFF key to switch off the unit and press it again to restart.

7.1.5.3 Compressor Low-pressure Protection

◆ When it is detected that the low-pressure switch is off, the complete unit will be stopped and be automatically restarted after 3 minutes. If E3 is displayed, the unit cannot be restarted automatically, in which case you have to press ON/OFF key to switch off the unit and press this key again to restart.

◆ If it is detected that the low-pressure switch is off when the compressor is stopped, the complete unit will be stopped, E3 will be displayed and the unit cannot be restarted automatically. You have to press ON/OFF key to switch off the unit and press this key again to restart.

7.1.5.4 Exhaust Pipe High-temp. Protection

◆ After the compressor is started, if the exhaust temperature is too high or exhaust sensor is in short circuit (or open circuit), the unit will be stopped when the indoor ambient temperature reaches the preset value.

◆ After the compressor is stopped for 3 minutes, the complete unit will be restarted when the exhaust temperature is resumed to normal.

◆ In case of above issue, the complete unit cannot resume its operation and E4 will be displayed. You have to press ON/OFF key to switch off the unit and press this key again to resume operation under preset mode.

7.1.5.5 Indoor Overtemperature Protection

◆ If it is detected that the evaporator tube temperature is too high under heating mode, the outdoor fan will be stopped. When the evaporator tube temperature resumes to normal, the outdoor fan will be started.

7.1.5.6 Low-voltage Protection

◆ If the current is detected over 22A as the compressor is started, the unit will be stopped when indoor ambient temperature reaches preset value. The compressor will automatically resume to its original operating status after it is stopped for 3 minutes. If E5 is displayed, the compressor cannot resume to its original operating status automatically, in which case you have to press ON/OFF key to switch off the unit and press this key again.

7.1.5.7 Fault Code and Definition

Fault Code	Definition
E1	Compressor High-pressure Protection
E2	Indoor Antifreeze Protection
E3	Compressor Low-pressure Protection
E4	Exhaust Pipe High-temp. Protection
E5	Low-voltage Protection

7.1.5.8 Compulsory Cooling (Heating) Mode

If no valid key-press upon first energization:

① From the remote controller, you can press temperature selection key (+) to enter into compulsory heating mode, in which case all the keys on front panel and remote controller will be shielded, all loads will be started and the indoor fan will run at high speed. If it is detected that ambient temperature is in open circuit or higher than 105℃, or that evaporator temperature is in open circuit or higher than 105℃, the buzzer will beep. After five minutes, the unit will be stopped and enter into normal standby status.

② From the remote controller, you can press temperature selection key (-) to enter into compulsory cooling mode, in which case all the keys on front panel and remote controller will be shielded, all loads except the 4-way valve will be started and the indoor fan will run at high speed. If it is detected that ambient temperature is in open circuit or higher than 105℃, or that evaporator temperature is in open circuit or higher than 105℃, the buzzer will beep. After five minutes, the unit will be stopped and enter into normal standby status.

The functions stated in 1 and 2 are only for test purpose. Compulsory heating function is not available for cooling-only unit.

7.1.5.9 Indicator

◆ Power indicator: It is bright when energized and black when de-energized. It will blink under indoor antifreeze protection, compressor high-pressure protection, low-voltage protection and defrosting.

◆ Cooling indicator: It is bright under cooling mode, dehumidifying mode, auto cooling mode or auto dehumidifying mode. It is black under other modes.

◆ Heating indicator: It is bright under heating mode and auto heating mode. It is black under other modes

7.1.5.10 Power-OFF Memory Function

Memory function includes the mode, swing, preset temperature, preset fan speed, Auto ON/OFF (If the power is cut off before the preset time for AUTO ON/OFF, the timer will count the time again once the power is resumed. If the power is cut off after the preset time for AUTO ON/OFF, the unit, once energized again, will run under the mode after preset AUTO OFF time).

Once energized again after any de-energization, the unit can be automatically restarted according to the memory.

7.2 Description and Function of Remote Controller Keys

Notes:

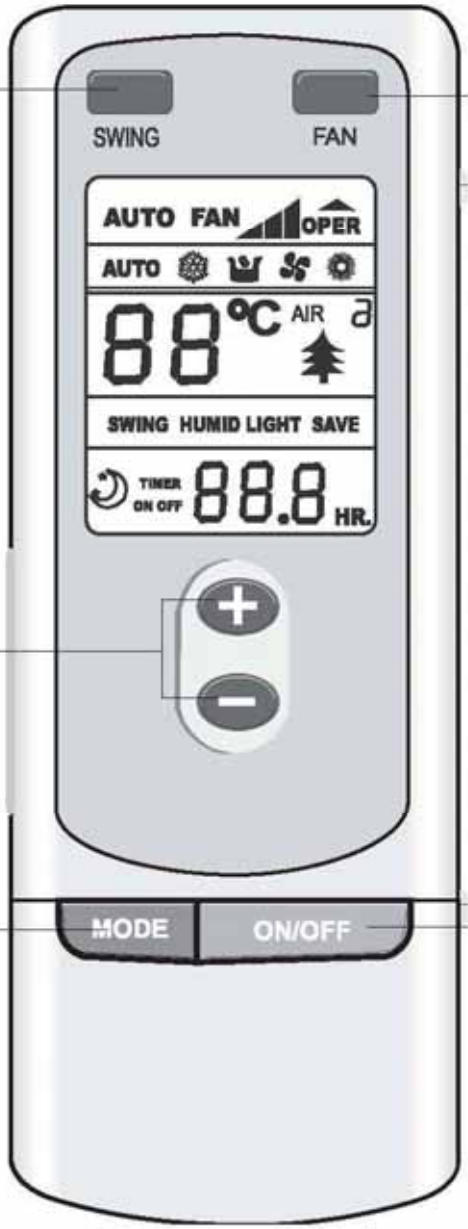
- Make sure that there is no obstruction between remote controller and signal receiving window.
- Do not fall off or throw the remote controller.
- Do not let any liquid flow into remote controller, or expose the remote controller under direct sunshine or extreme hot temperature.

SWING key
One press of this key will enable the guide louver to swing at a specific angle. Another press will stop the guide louver.

FAN key
Each press of this key will change the fan speed sequentially as below:

Auto Fan → → → →

Note: The fan speed is not adjustable under "" Mode.



TEMP. key
Each press of (+) key will increase the preset temperature by 1℃. Each press of (-) key will decrease the preset temperature by 1℃.
Under " " mode, the indoor temperature can be adjusted to any value between 16~30℃.

" " Cooling mode
" " Dehumidifying mode
" " Fan mode
" " Heating Mode

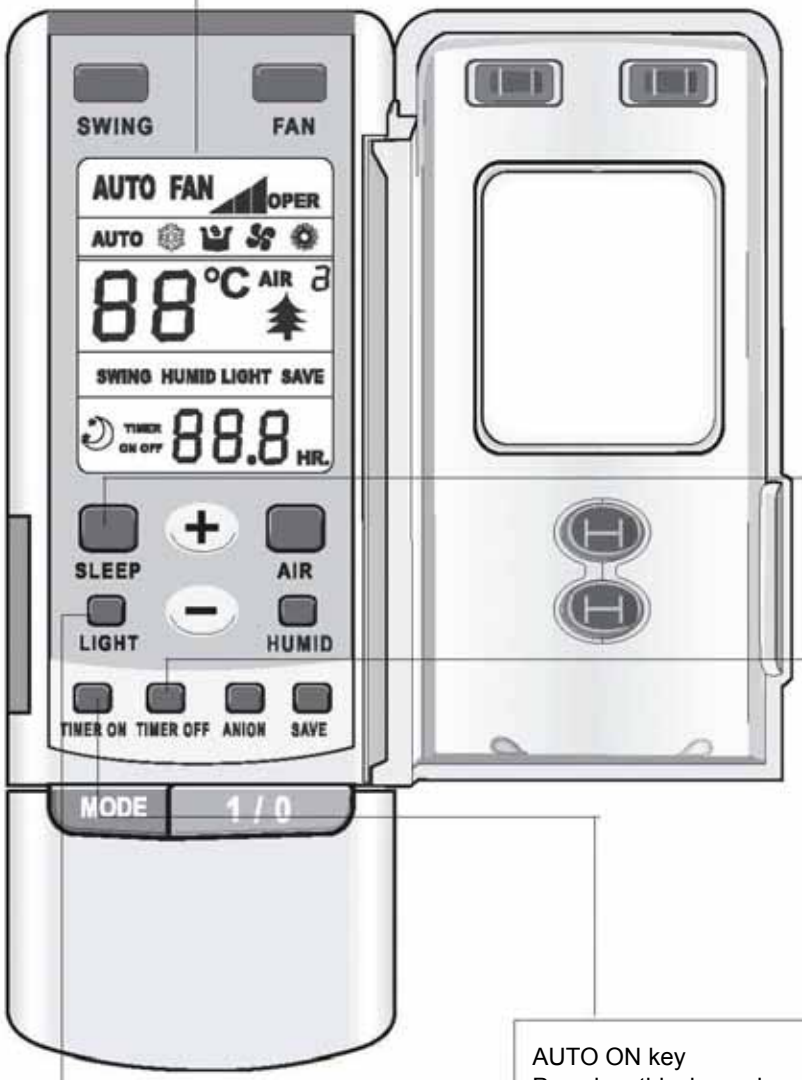
MODE key
The run mode will change sequentially as below with each press of MODE key.

Auto → → → → →

ON/OFF key
Press this key to start the air conditioner. Press it again to stop the air conditioner.

7.3 Description and Function of Remote Controller Keys (After opening the rear cover)

Note: This remote controller is for general use and applicable to multiple types (functions) of air conditioner. **AIR, HUMID, LIGHT, ANION and SAVE** buttons are not used for these models.



LCD display
Display the information selected by each key

SLEEP key
Press this key to enter into sleep mode and press it again to exit sleep mode.
Note: There is no sleep function under Auto or Fan mode.

AUTO OFF key
Pressing this key when the unit is running, you can set the AUTO OFF time from 0 to 24 hours.

0 → 24h
Cancel the AUTO ON/OFF

Lamp indicator
Press this key to switch on the lamp.
Press it again to switch off the lamp.

AUTO ON key
Pressing this key when the unit is stopped, you can set the AUTO ON time from 0 to 24 hours. Each press of this key will increase the time by 0.5 hour.

0 → 24h
Cancel the AUTO ON/OFF

7.4 Installation of Remote Controller Batter

- Operating Guideline

General Procedures:

1. Switch on the power and press ON/OFF key to start the air conditioner.
2. Press MODE key to select your desired run mode.
3. Press SWING key to enable the guide louver to swing at a specific angle. Press it again to stop the swing.
4. Press FAN key to set the fan speed.
5. Press +/- key to set your desired temperature.

Optional Procedures:

6. Press SLEEP key from remote controller to set the sleep mode.
7. Press AUTO ON/OFF key and then press +/- key to set the timer.

Note: When auto mode is selected, the air conditioner will automatically select an appropriate run mode according to the indoor temperature, making the environment comfortable.

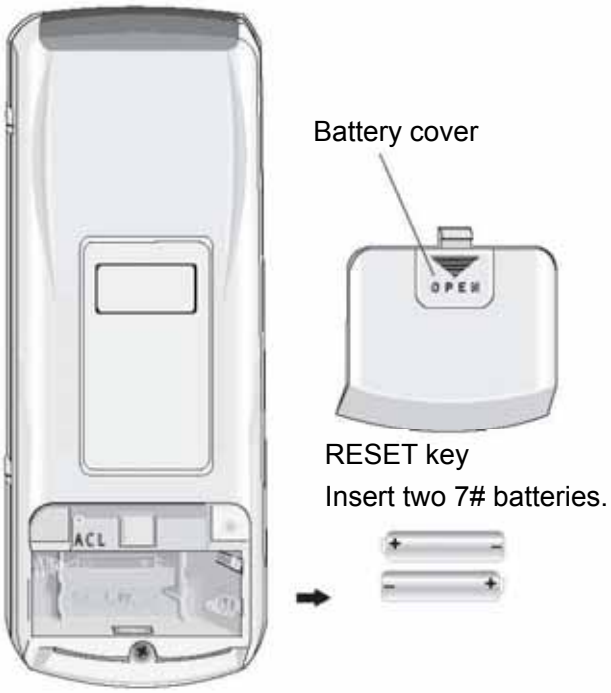
- Replacement of Remote Controller Battery

Two pieces of 7# alkali dry batteries are used in the remote controller.

1. Slide the battery cover of remote controller downward. Remove the old batteries and replace with two pieces of new batteries (Take care that the polarity shall be correct)
2. Close the battery cover of remote controller.

Note:

- Do not use new batteries together with old batteries, or use different types of batteries together.
- To avoid leakage of liquid and damage to the remote controller, please take out the batteries if you will not use the remote controller in several weeks.
- Operate the remote controller within effective range.
- Keep the remote controller at least 1 meter away from television set or sound equipment.

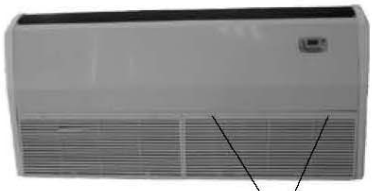


8 Disassembly and Assembly Procedures

8.1 Disassembly Procedures of Indoor Unit GE AIR F24 IN, F34 IN & F41

8.1.1 Disassemble Front Grill Sub-Assy

Manually push the clasp of front grill sub-assy downward to open the front grill. (Fig 8-1)

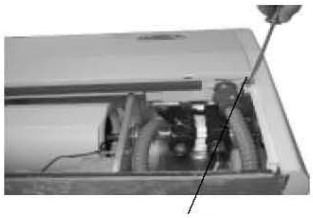


(Fig 8-1)

Clasp

8.1.2 Disassemble Left and Right Panels

Use screwdriver to screw off the screws shown in the position, and then move the panels toward the direction of arrow to Disassemble the left and right decorative panels. (Fig 8-2)

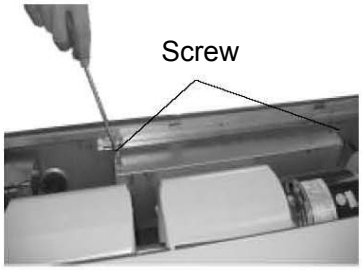


Screw

(Fig 8-2)

8.1.3 Disassemble Electric Box Assy

A. Use screwdriver to twist off the two screws shown in the figure and remove the electric box cover (8-3);
B. Use screwdriver to twist off the screw shown in the figure, remove the capacitor support, and disconnect the cables (refer to Figure 8-4);
C. Use screwdriver to twist off the four screws (2 screws at each side), remove the electric box sub-assy, and disconnect the cables (refer to Figure 8-5);



Screw

(Fig 8-3)

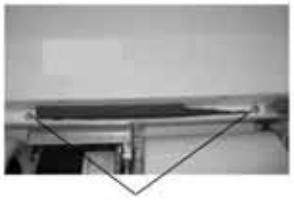
(Fig 8-4) Screw

Screw (Fig 8-5)

Operating Procedures / Photos

8.1.4 Disassemble Front Panel Assy

Use screwdriver to screw off the six screws shown in the figure (two screws at the left, right and rear sides respectively), remove the front panel assy toward the direction shown in the figure to remove it (refer to figures 8-6, 8-7).

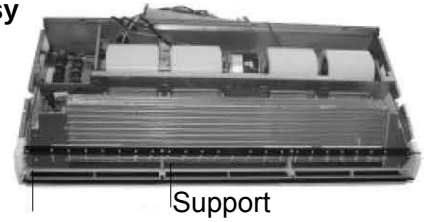


Screw
(Fig 8-6)

Screw
(Fig 8-7)

8.1.5 Disassemble Guide Louver Sub-assy

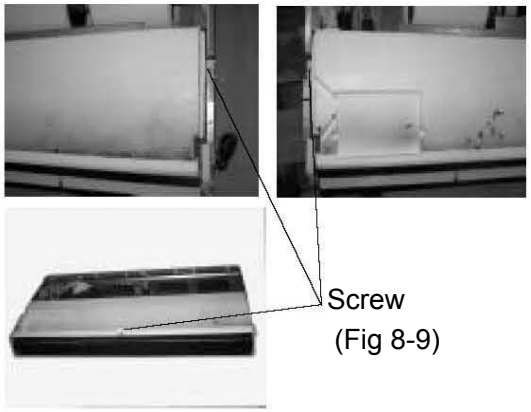
First remove the guide louver from the fitting position of the guide louver support, then remove the two ends of the guide louver from the fitting position of the swing motor. (Fig 8-8)



(Fig 8-8)

8.1.6 Disassemble Water Tray Sub-assy

Use screwdriver to screw off the three screws shown in the figure so as to remove the water tray sub-assy (refer to Figure 8-9).



(Fig 8-9)

Operating Procedures / Photos

8.1.7 Disassemble Mounting Plate Sub-assy of Swing Louver

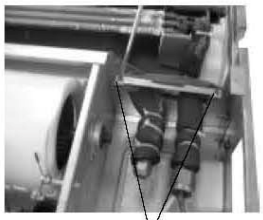
Use screwdriver to screw off the screws at both ends of the mounting plate sub-assy of swing louver. Take the mounting plate sub-assy of swing louver apart from the guide louver support. (Fig 8-10)

(Fig 8-10)

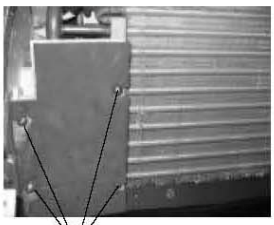
8.1.8 Disassemble Evaporator Assy

Use screwdriver to screw off the screw shown in the figure. Remove the tube-exit clamp sub-assy of evaporator. (Fig 8-11)

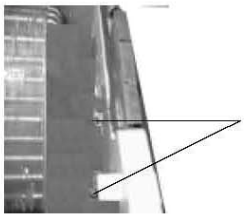
Use screwdriver to screw off the screw shown in the figure and remove the evaporator assy. Handle with care. (Fig 8-12、Fig 8-13)



(Fig 8-11)



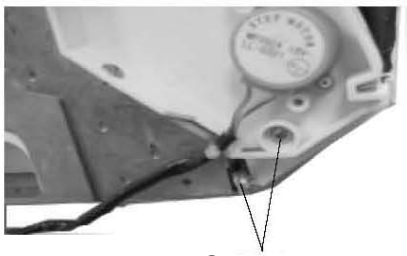
(Fig 8-12)



(Fig 8-13)

8.1.9 Disassemble Air Outlet Rear Side Plate Sub-assy

First remove the velvet sheet and the left and right side plate cushions at the air outlet; then use screwdriver to screw off the screw shown in the figure. (Fig 8-14)

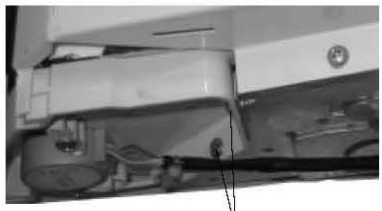


(Fig 8-14)

Operating Procedures / Photos

8.1.10 Disassemble Mounting Plate Sub-assy of Swing Motor

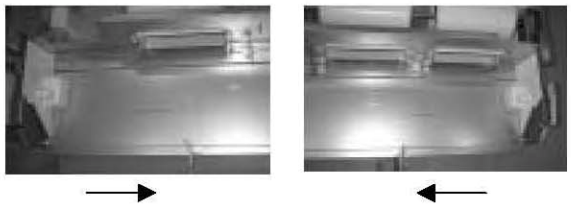
Use screwdriver to screw off the screw shown in the figure. (Fig 8-15)



(Fig 8-15) Screw

8.1.11 Disassemble Left and Right Side Plate Foam Sub-ass

Follow the shown direction to remove the left and right side plate foam sub-assy. (Fig 8-16)



Left Side Plate Foam Sub-assy

Right Side Plate Foam Sub-assy

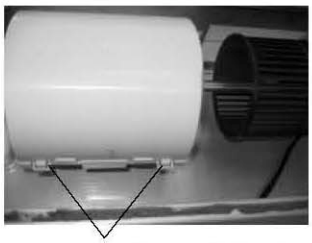
(Fig 8-16)

8.1.12 Disassemble Fan Motor Assy

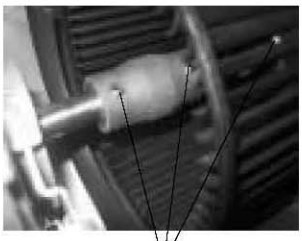
Press downward the clasps fitting the front and rear propeller housings, then pull upward to remove the front propeller housing (refer to Figure 8-17).

Hold the clasp position of the rear propeller housing and pull upward to remove the rear propeller housing (refer to Figure 8-18).

Use special tool to screw off the two holding screws at the coupling, move the coupling toward the fan until the coupling and shaft sub-assy can be removed; use special tool to remove the holding screw fixing the fan to remove the fan (refer to Figure 8-19).

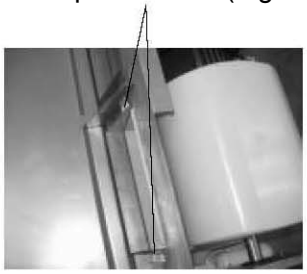


Clasp Position (Fig 8-17)



Holding Screw

(Fig 8-18)

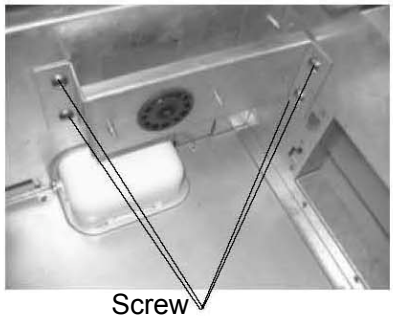


(Fig 8-19)

Operating Procedures / Photos

8.1.13 Disassemble Bearing Mounting Plate

Use screwdriver to screw off the four screws at the bearing mounting plate. (Fig 8-20)

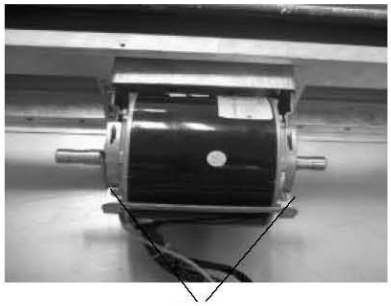


Screw

(Fig 8-20)

8.1.14 Disassemble Motor

Use screwdriver to screw off the screw shown in the figure to remove the motor clamp and the motor fixing hoop. (Fig 8-20)



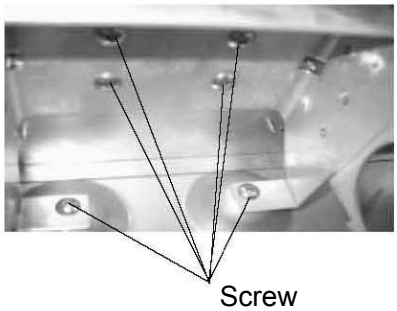
Screw

(Fig 8-20)

8.1.15 Disassemble Motor Mounting Plate Sub-assy

Use screwdriver to screw off the screw at the motor mounting plate to remove the motor mounting plate sub-assy. (refer to Figure 8-21).

Motor Mounting Plate Sub-assy



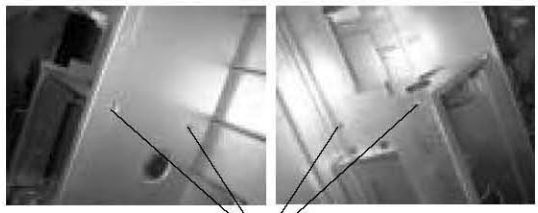
Screw

(Fig 8-21)

Operating Procedures / Photos

8.1.16 Disassemble Supporting Plate of Motor Support

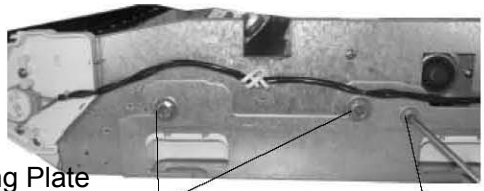
Use screwdriver to screw off the screws connecting the supporting plate of motor support and the rear side plate sub-assy with the motor support. (Fig 8-22)



(Fig 8-22)

8.1.17 Disassemble Left and Right Mounting Plates

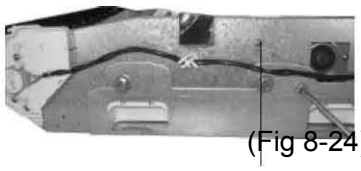
Use tool to remove the bolts (2 X M8, 2 X M6) fixing the left and right mounting plates. (Fig. 8-23)



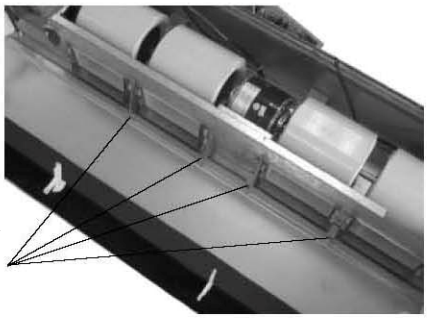
(Fig 8-23)

8.1.18 Disassemble Motor Support

Use screwdriver to screw off the screws at the rear support base plate and at the both sides of the support as shown in the figure to remove the motor support. (refer to Fig. 8-24、8-25).



(Fig 8-24)



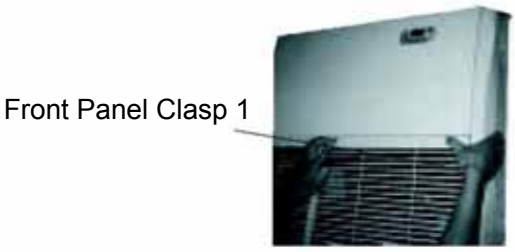
(Fig 8-25)

8.2 Disassembly Procedures of Indoor Unit

Operating Procedures / Photos Applicable to the models: GE AIR F34 IN/ GE AIR F41 IN

8.2.1 Disassemble Front Grill Sub-Assy

Use tool to push the clasp 1 of front grill sub-assy downward to open the front grill. (Fig 8-26)



(Fig 8-26)

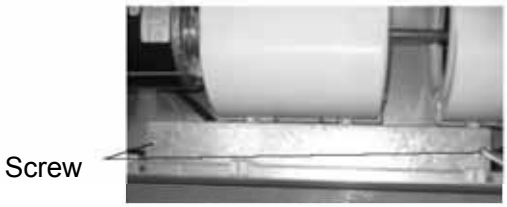
8.2.2 Disassemble Left and Right Decorative Panels

Screw off the screw in the decorative panel, and then manually pull toward the direction of arrow to remove the left and right decorative panels. (Fig 8-27)

(Fig 8-27)

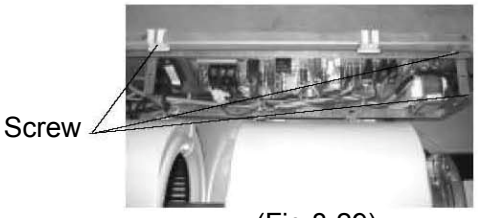
8.2.3 Disassemble Electric Box Assy

Use screwdriver to twist off the two screws at the electric box and manually pull the electric box cover upward to remove the electric box. (Fig 8-28)

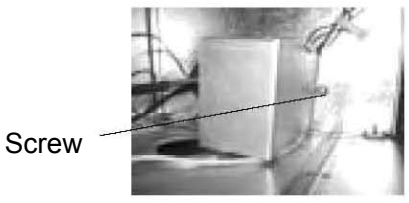


(Fig 8-28)

Use screw driver to loosen the two screws at upper and two screws at lower. Remove the capacitor board (As shown in Fig. 8-29)
Use screwdriver to twist off the two upper screws and the two lower screws and remove the capacitor support. Use screwdriver to screw off the screw shown in Figure 5 and disconnect the cables to remove the electric box sub-assy. (Fig 8-30)



(Fig 8-29)

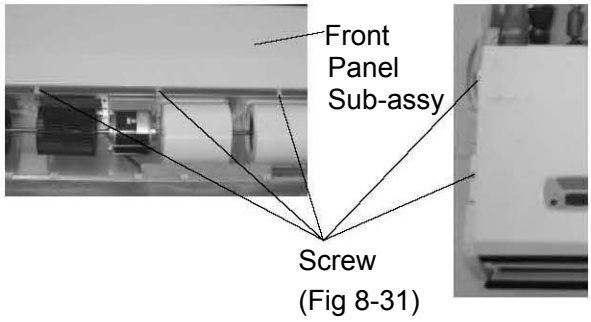


(Fig 8-30)

Operating Procedures / Photos

8.2.4 Disassemble Front Panel Assy

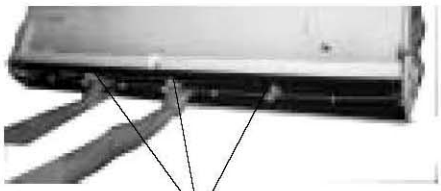
Screw off the screws at the front and at the two sides. Remove the front panel sub-assy. (Fig 8-31)



(Fig 8-31)

8.2.5 Disassemble Guide Louver Sub-assy

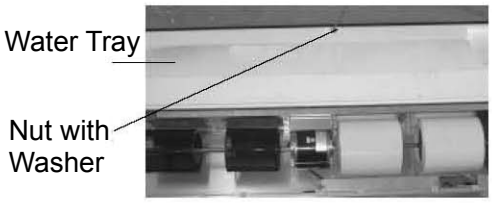
First remove the guide louver from the fitting position of the guide louver support, then remove the two ends of the guide louver from the fitting position of the swing motor. (Fig 8-32)


(Fig 8-32)

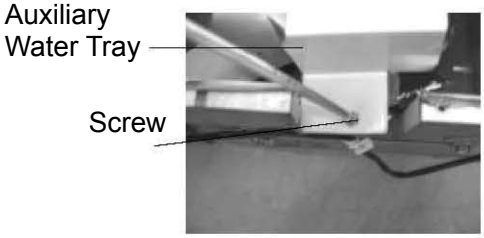
8.2.6 Disassemble Water Tray Sub-assy

Use screwdriver to screw off the nut with washer at the middle of water tray. (Fig 8-33)

Use screwdriver to screw off the two side screws of the auxiliary water tray. Pull the auxiliary water tray and the water tray upward to remove them. (Fig 8-34)



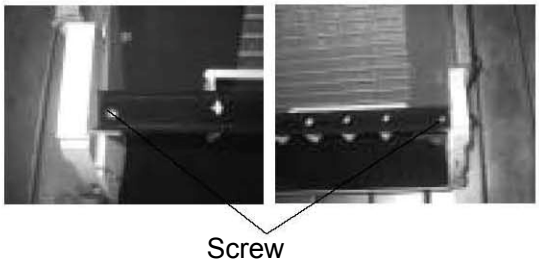
(Fig 8-33)



(Fig 8-34)

8.2.7 Disassemble Mounting Plate Sub-assy of Swing Louver

Use screwdriver to screw off the screws at both ends of the mounting plate sub-assy of swing louver. Take the mounting plate sub-assy of swing louver apart from the guide louver support. (Fig 8-35)



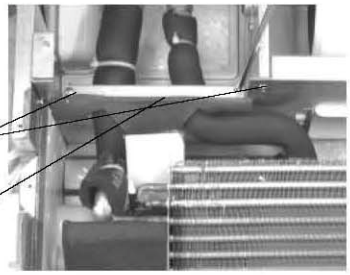
(Fig 8-35)

Operating Procedures / Photos

8.2.8 Disassemble Evaporator Assy

Use screwdriver to screw off the two screws at the tube-exit plate of evaporator. Remove the tube-exit plate of evaporator. (Fig 8-36)

Use screwdriver to screw off the screw shown in the figure to remove the evaporator. (Fig 8-37)

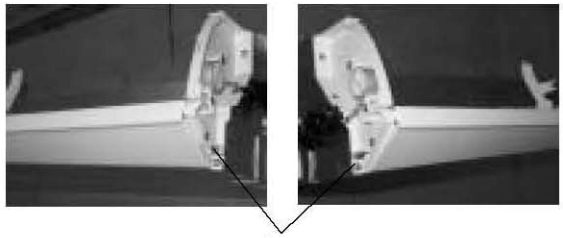


)

(Fig 8-37)

8.2.9 Disassemble Left and Right Mounting Plates

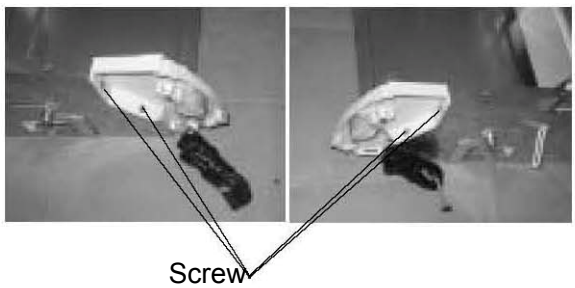
First remove the flocking fabrics and the left and right side plate cushions at the air outlet; then use screwdriver to screw off the screw shown in the figure. (Fig 8-38)



(Fig 8-38)

8.2.10 Disassemble Mounting Plate Sub-assy of Swing Motor

Use screwdriver to screw off the screw shown in the figure. (refer to Figure 8-39).



(Fig 8-39)

Operating Procedures / Photos

8.2.11 Disassemble Mounting Plate Sub-assy of Swing Motor

Use screwdriver to screw off the screw shown in the figure. (Fig 8-40)

(Fig 8-40)

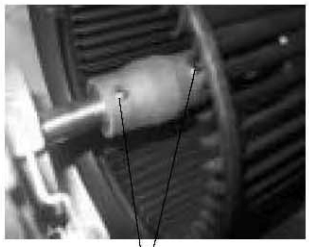
8.2.12 Disassemble Fan Motor Assy

Press downward the clasps fitting the front and rear propeller housings, then pull upward to remove the front propeller housing (refer to Figure 8-41).

Hold the clasp position of the rear propeller housing and pull upward to remove the rear propeller housing (refer to Figure 8-42).

Use special tool to screw off the two holding screws at the coupling, move the coupling toward the fan until the coupling and shaft sub-assy can be removed; use special tool to remove the holding screw fixing the fan to remove the fan (refer to Figure 8-43).

(Fig 8-41)
Clasp Position



(Fig 8-42)
Holding Screw

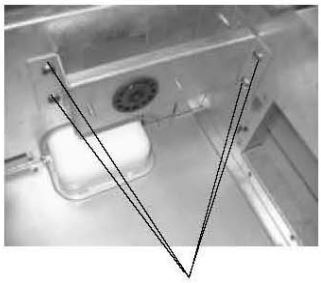
Clasp Position

8.2.13 Disassemble Bearing Mounting Plate

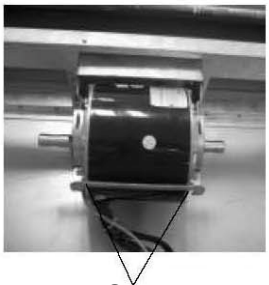
Use screwdriver to screw off the four screws at the bearing mounting plate. (Figure 8-44).

8.2.14 Disassemble Motor

Use screwdriver to screw off the screw shown in the figure to remove the motor clamp and the motor fixing hoop.(Figure 8-45)



Screw
(Fig 8-44)

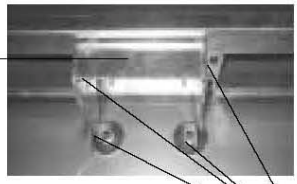


Screw
(Fig 8-45)

Operating Procedures / Photos

8.2.15 Disassemble Motor Mounting Plate Sub-assy

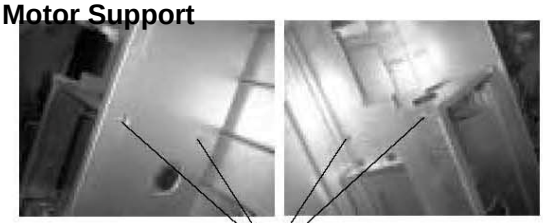
Use screwdriver to screw off the six screws at the motor mounting plate to remove the motor mounting plate sub-assy. (Fig 8-46)



(Fig 8-46)

8.2.16 Disassemble Supporting Plate of Motor Support

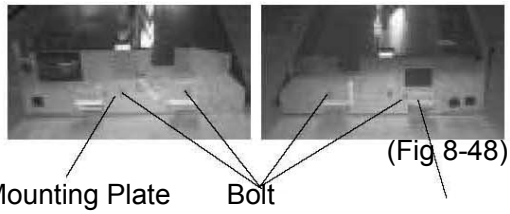
Use screwdriver to screw off the screws connecting the supporting plate of motor support and the rear side plate sub-assy with the motor support. (Fig 8-47)



(Fig 8-47)

8.2.17 Disassemble Left and Right Mounting Plates

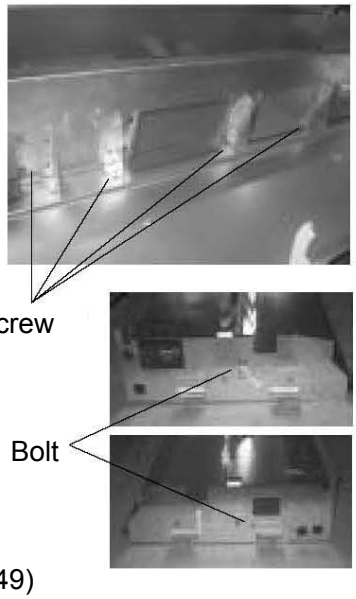
Use tool to remove the bolts (2 X M8, 2 X M6) fixing the left and right mounting plates. (Fig 8-48)



(Fig 8-48)

8.2.18 Disassemble Motor Support

Use screwdriver to screw off the screws at the rear support base plate and at the both sides of the support as shown in the figure to remove the motor support.



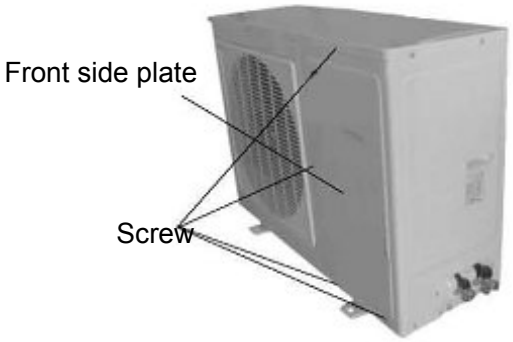
(Fig 8-49)

8.3 Disassembly Procedures of Outdoor Unit

Operating Procedures / Applicable Models: GE AIR F24 OUT / GE AIR F34 OUT

8.3.1 Disassemble Front Side Plate

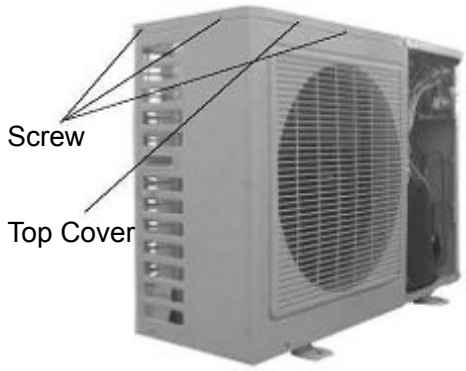
Screw off the four screws around the front side plate to remove the front side plate. (Fig 8-50)



(Fig 8-50)

8.3.2 Disassemble Top Cover

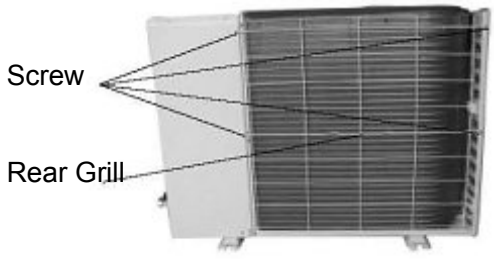
Screw off the tapping screws around the top cover, and then pull the top cover upward to remove it. (Fig 8-51)



(Fig 8-51)

8.3.3 Disassemble Rear Grill

Screw off the four screws around the rear grill to remove the rear grill. (Fig 8-52)

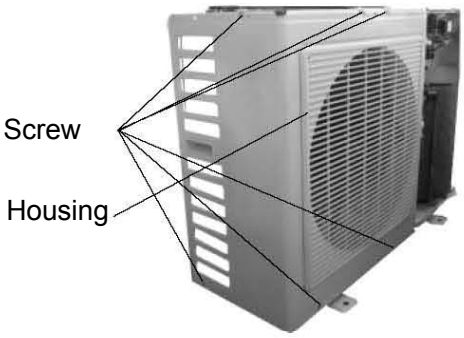


(Fig 8-52)

Operating Procedures / Photos

8.3.4 Disassemble Housing

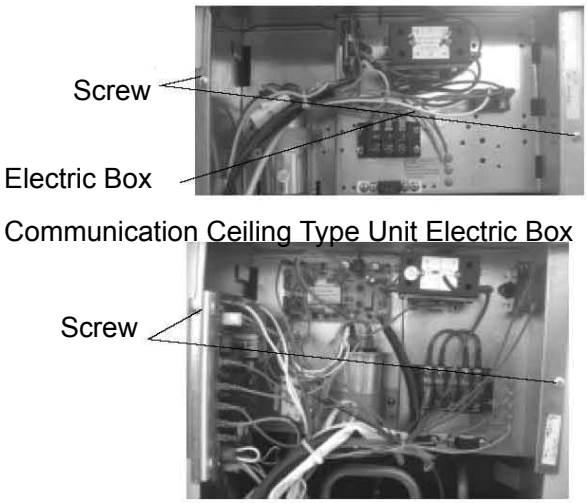
Use screwdriver to screw off the screws around the cabinet to remove the housing. (8-53)



(Fig 8-53)

8.3.5 Disassemble Electric Box

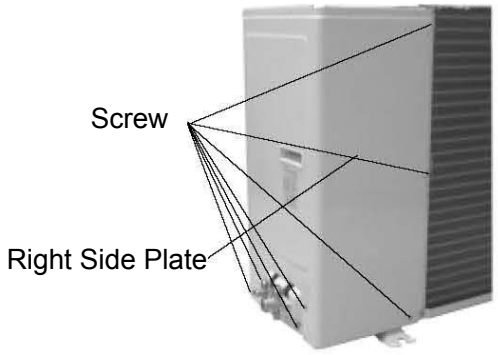
Use screwdriver to screw off the screws fixing the electric box, and pull the electric box to remove it. (Fig 8-54)



(Fig 8-54)

8.3.6 Disassemble Right Side Plate

Use screwdriver to screw off the screws at the right side plat, condenser side plate, gas valve and liquid valve, and then pull the right side plate sub-assy upward to remove it. (Fig 8-55)

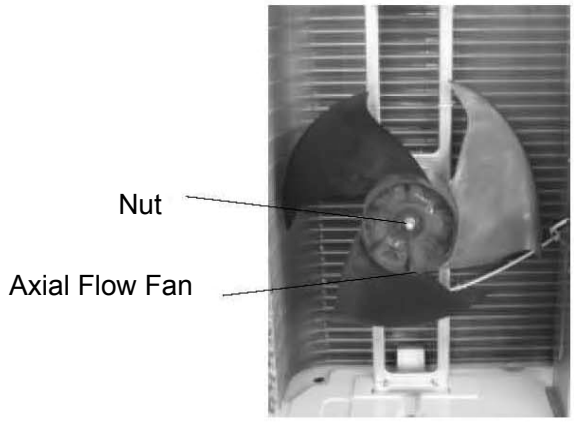


(Fig 8-55)

Operating Procedures / Photos

8.3.7 Disassemble Axial Flow Fan

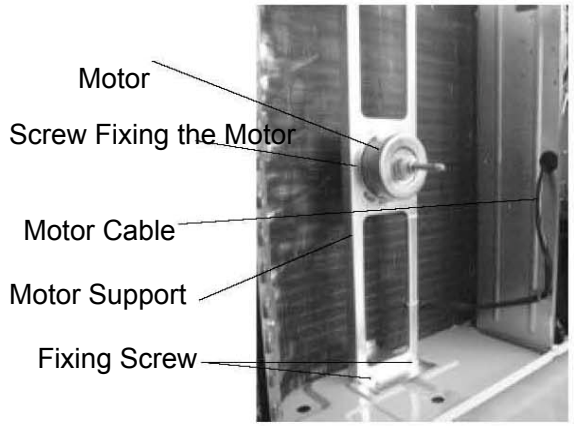
Use spanner to remove the nut at the fan to remove the axial flow fan. (Fig 8-56)



(Fig 8-56)

8.3.8 Disassemble Outdoor Motor

Screw off the four tapping screws fixing the motor, pull out the motor lead-out cable plug, and remove the motor. Screw off the two tapping screws fixing the motor support, and pull the motor support upward to remove it. (Fig 8-57)

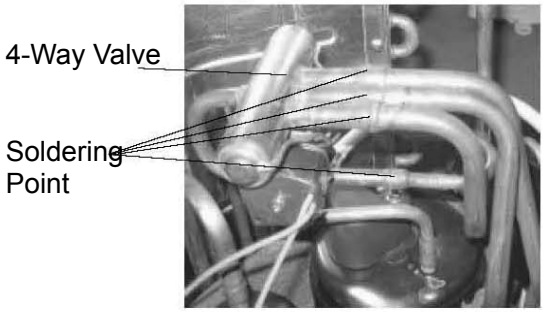


(Fig 8-57)

8.3.9 Disassemble 4-Way Valve

（Only Heating and Cooling Unit has such valve）

Screw off the holding nut of the 4-way valve coil and remove the coil. Use wet cotton cloth to wrap the 4-way valve, unsold the four soldering points connecting the 4-way valve, and remove the 4-way valve. Be quick during the unsoldering process, pay attention to keep the wrapping cloth wet and do not allow the soldering flame to burn the compressor lead-out cable. (Fig 8-58)



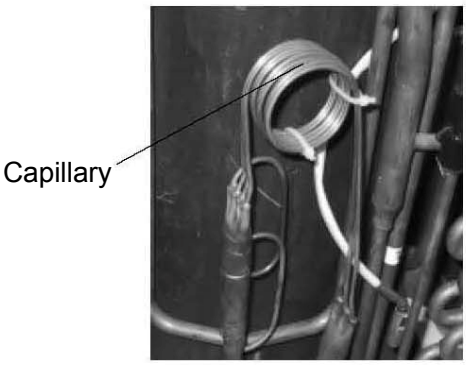
(Fig 8-58)

Operating Procedures / Photos

8.3.10 Disassemble Capillary

Unsold the soldering points at the capillary, the valve and the condenser to remove the capillary. Pay attention not to allow the soldering slag to block the capillary.

(Fig 8-59)

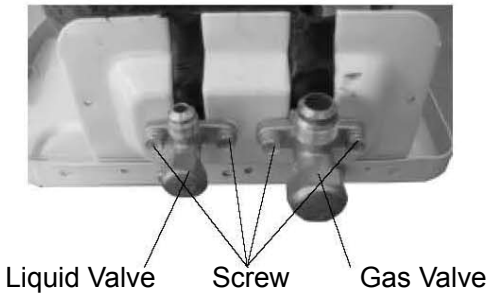


8-59

8.3.11 Disassemble Valve

Unscrew the two screws fixing the gas valve, unsolder the soldering point between the gas valve and the return-air duct and remove the gas valve (note: when unsoldering the soldering point, use wet cloth to completely wrap the gas valve to prevent valve body from being harmed by high temperature).
Unscrew the two screws fixing the liquid valve, unsolder the soldering point connecting the liquid valve and the fork type pipe, and remove the liquid valve.

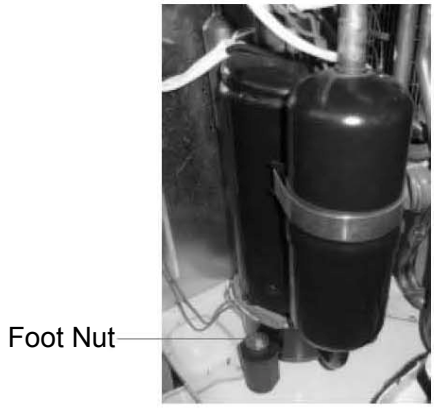
(Fig 8-60)



8-60

8.3.12 Disassemble Compressor

Firstly unsolder the pipes connecting the compressor, and then unscrew the three foot nuts at the compressor to remove the compressor. (Fig 8-61)



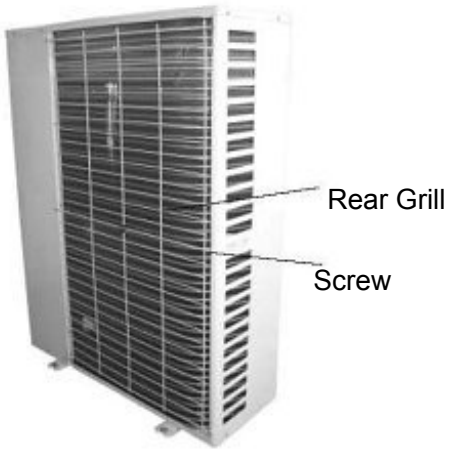
8-61

8.4 Disassembly Procedures of Outdoor Unit

Operating Procedures/ / Applicable Models: GE AIR F41 OUT

8.4.1 Disassemble Rear Grill

Screw off the tapping screws at the rear side plate, valve support chassis and condenser side plate to remove the rear grill. (Fig 8-62)



8－62

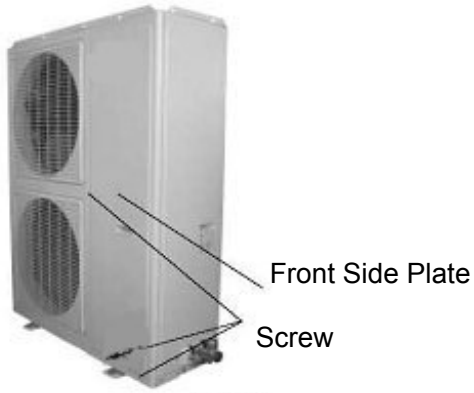
8.4.2 Disassemble Top Cover Plate

Screw off the tapping screws around the top cover, and then pull the top cover upward to remove it. (Fig 8-63)

8－63

8.4.3 Disassemble Front Side Plate

Screw off the three tapping screws at the front side plate, and then pull the front side plate upward to remove it. (Fig 8-64)

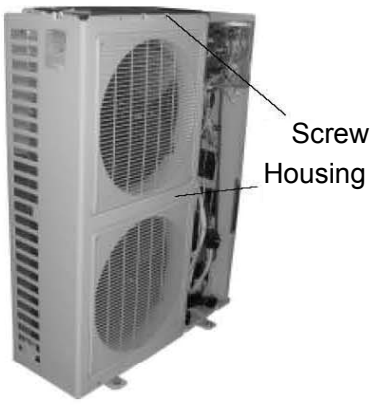


8－64

Operating Procedures / Photos

8.4.4 Disassemble Housing

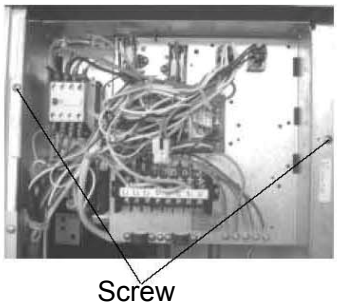
Unscrew the screws around the housing to remove it.
(Fig 8-65)



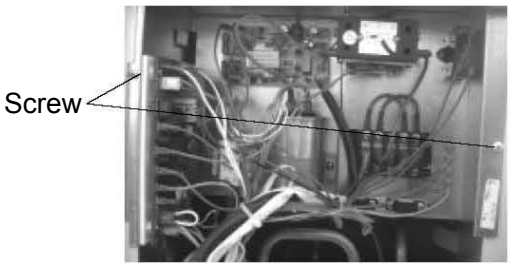
8－65

8.4.5 Disassemble Electric Box

Unscrew the screws around the electric box sub-assy to remove it. (Fig 8-66)



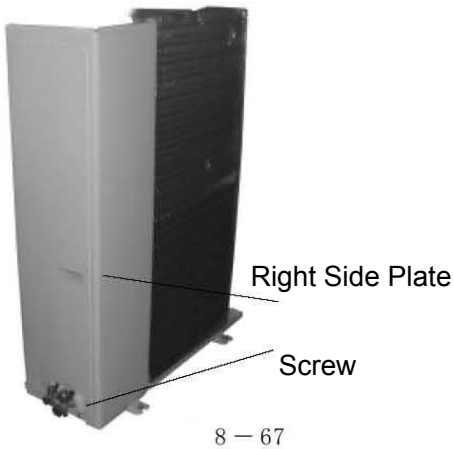
Communication Cassette Type Unit Electric Box



8－66

8.4.6 Disassemble Right Side Plate

Unscrew the screws around the right side plate to remover the right side plate. (Fig 8-67)

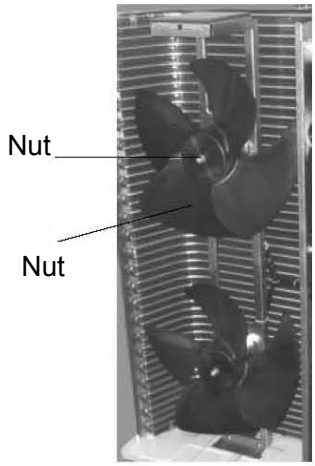


8－67

Operating Procedures / Photos

8.4.7 Disassemble Axial Flow Fan

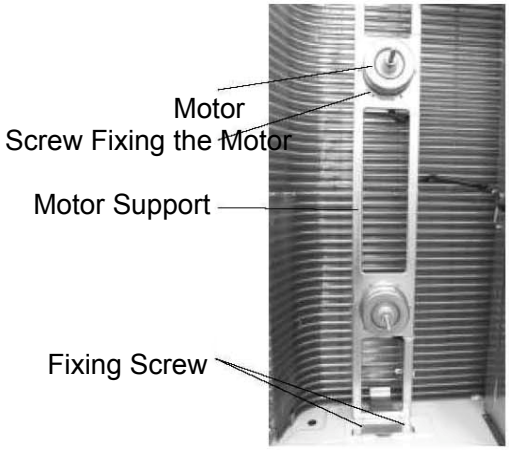
Use spanner to twist off the nut of the fan and remove the fan.
(Fig 8-68)



8 — 68

8.4.8 Disassemble Outdoor Motor

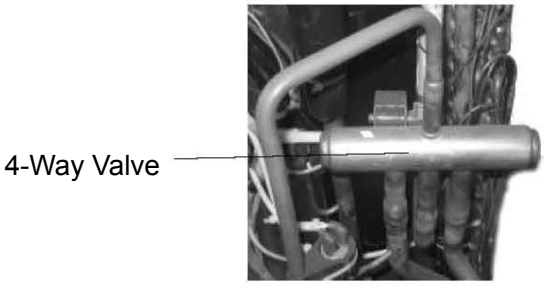
Screw off the four tapping screws fixing the motor, pull out the motor lead-out cable plug, and remove the motor. Screw off the two tapping screws fixing the motor support, and pull the motor support upward to remove it. (Fig 8-69)



8 — 69

8.4.9 Disassemble 4-Way Valve

Screw off the holding nut of the 4-way valve coil and remove the coil. Use wet cotton cloth to wrap the 4-way valve, unsold the four soldering points connecting the 4-way valve, and remove the 4-way valve. Be quick during the unsoldering process, pay attention to keep the wrapping cloth wet and do not allow the soldering flame to burn the compressor lead-out cable. (Fig 8-70)

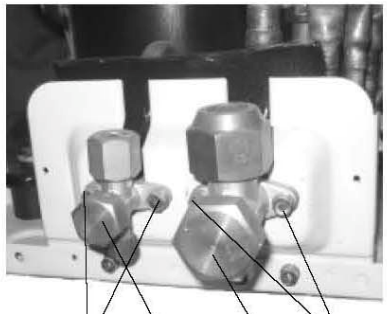


8 — 70

Operating Procedures / Photos

8.4.10 Disassemble Valve

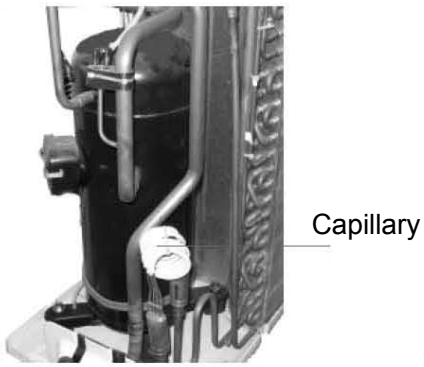
Unscrew the screw fixing the valve, unsolder the connecting pipe of the valve, and remove the valve.
(Fig 8-71)



8 — 71

8.4.11 Disassemble Capillary

Unsolder the soldering points between the capillary and other pipes to remove the capillary. (Fig 8-72)



8 — 72

8.4.12 Disassemble Compressor

Unscrew the foot screw of the compressor and unsolder the connecting pipe to remover the compressor. (Fig 8-73)

8 — 73

⑨ Care and Maintenance

Warning

- Be sure to stop the unit and plug out the power before cleaning your air conditioner. Otherwise, electric shock may happen.
- Never splash water on the indoor unit, this may cause the risk of electric shock.
- Volatile liquids such as thinner or gasoline will cause damage to the appearance of air conditioner. (Only use soft dry cloth or wet cloth soaked with neutral detergent to clean the indoor unit).

9.1 To clean the filter

Remove the filter and clean with vacuum cleaner. If very dirty, wash with warm water (below 45℃) that is added with neutral detergent. Fully dry the filter before reinstallation.

Suggestion: Too dirty filter will reduce air inflow and result in system overload, causing 6% more consumption of power. Therefore, it is quite necessary to clean the filter regularly.

9.2 To clean the equipment and components

Use dry and soft cloth or vacuum cleaner to clean the air conditioner and remote controller. If wet cloth is used, please wipe it dry after cleaning.

Warning: Never expose the front grill or air filter directly under the sun. Never clean it with hot water over 45℃ or dry it on fire, (as this will cause decoloring, fire or deformation).

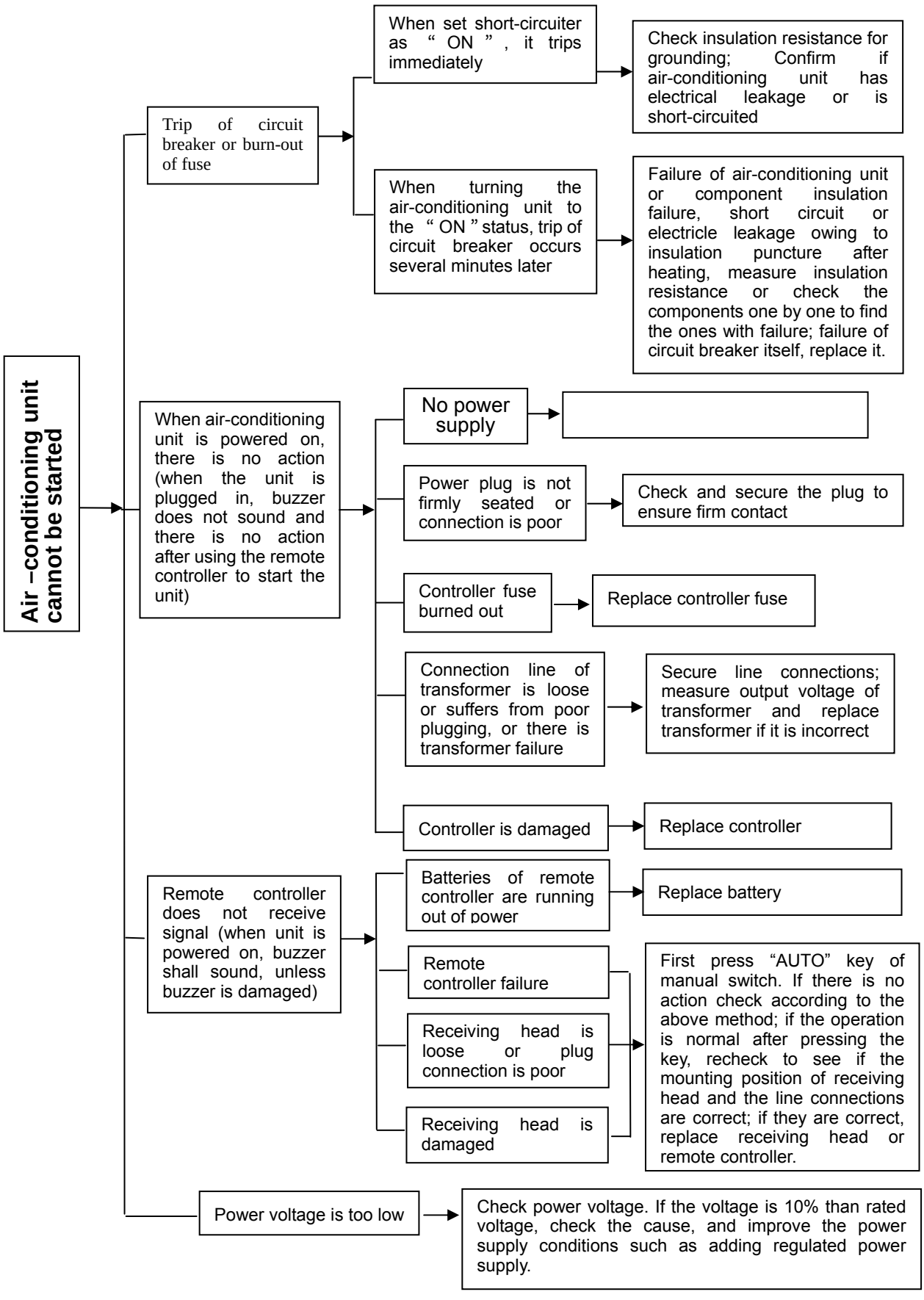
9.3 When using the air conditioner

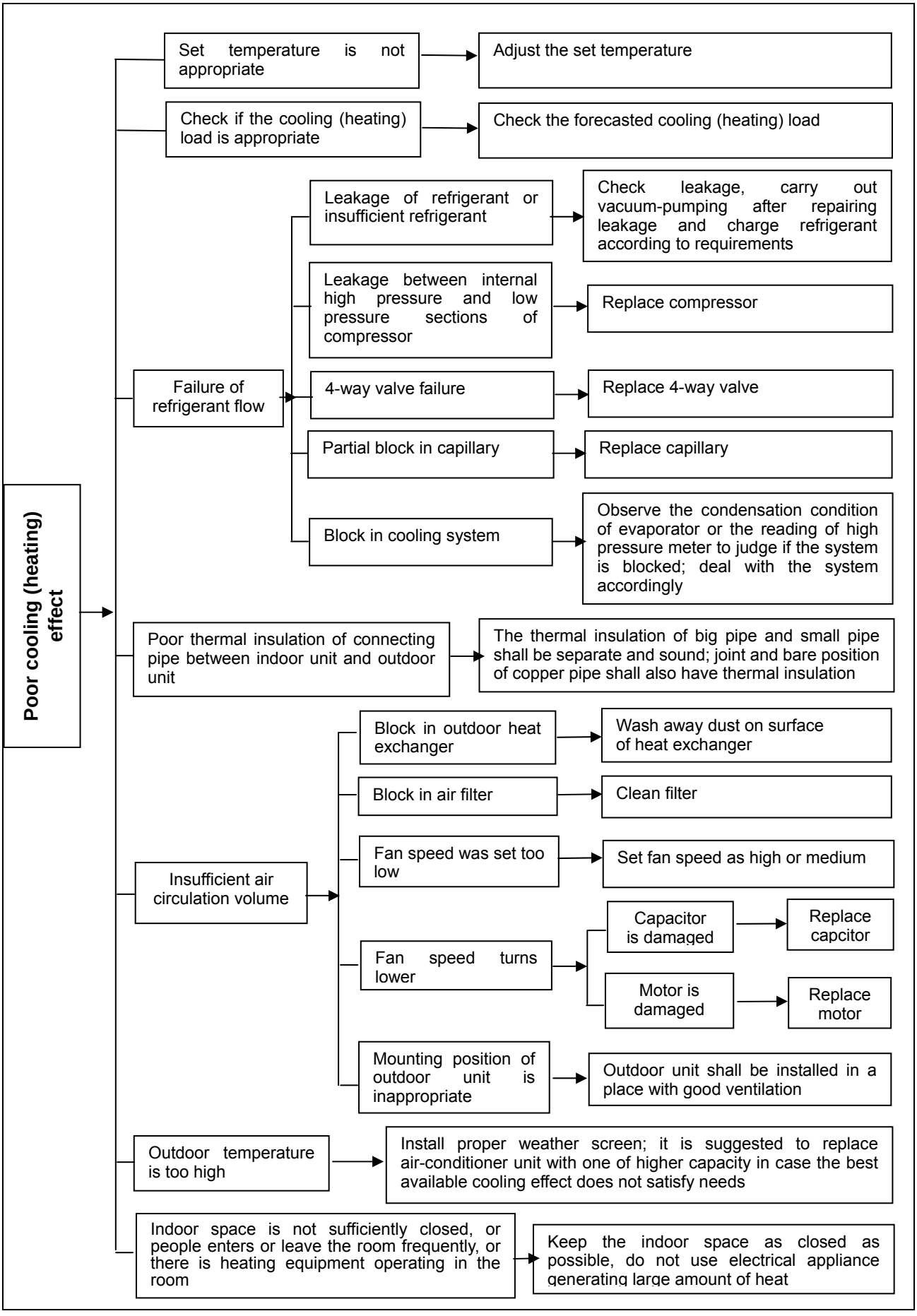
Check for any foreign articles that may obstruct the air into or out of the indoor and outdoor unit.
If the unit is operating without air filter, dust will deposit and cause trouble to the unit. Generally, be sure to install filter before operating the unit.
Check the drainage pipe for bend or damage.
Check the equipment for normal and correct installation.

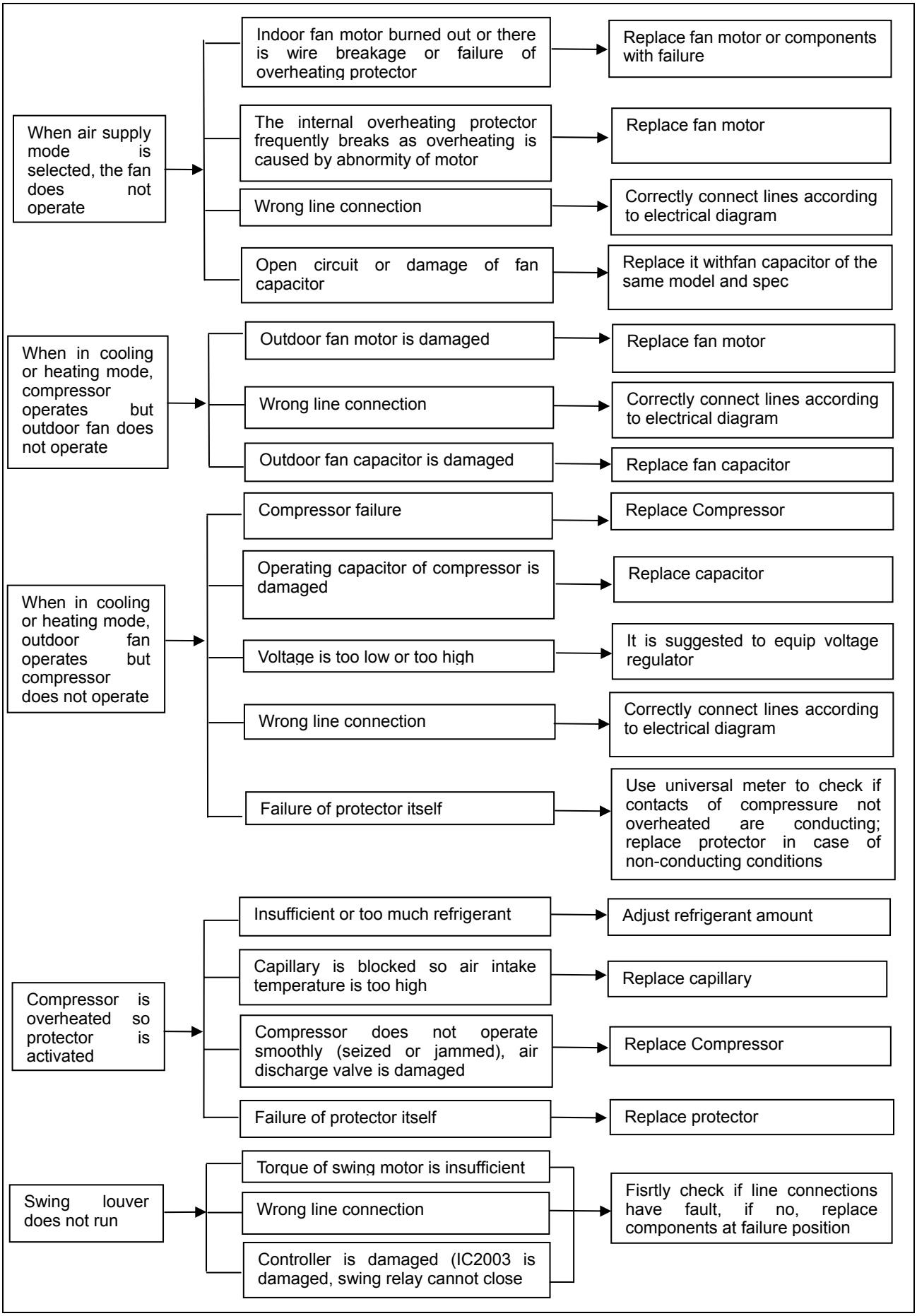
9.4 When the air conditioner is out of service

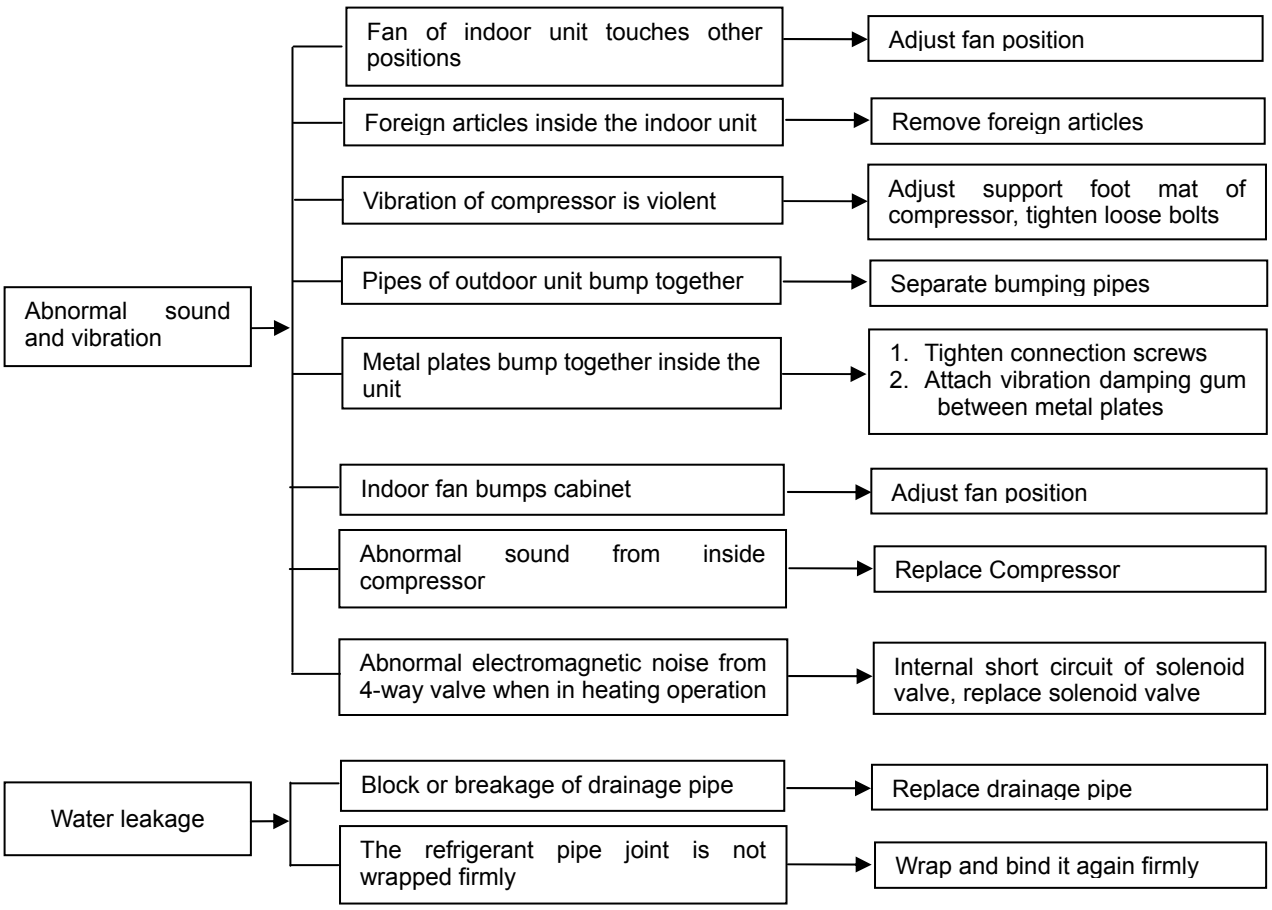
Pull off the plug and disconnect the power.
Clean the filter, equipment and components.
Start the fan for 2 to 3 hours to clean and dry the inside of the equipment.

⑩ Trouble-Shooting




Poor cooling (heating) effect
Set temperature is not appropriate
Adjust the set temperature
Check if the cooling (heating) load is appropriate
Check the forecasted cooling (heating) load
Failure of refrigerant flow
Leakage of refrigerant or insufficient refrigerant
Check leakage, carry out vacuum-pumping after repairing leakage and charge refrigerant according to requirements
Leakage between internal high pressure and low pressure sections of compressor
Replace compressor
4-way valve failure
Replace 4-way valve
Partial block in capillary
Replace capillary
Block in cooling system
Observe the condensation condition of evaporator or the reading of high pressure meter to judge if the system is blocked; deal with the system accordingly
Poor thermal insulation of connecting pipe between indoor unit and outdoor unit
The thermal insulation of big pipe and small pipe shall be separate and sound; joint and bare position of copper pipe shall also have thermal insulation
Insufficient air circulation volume
Block in outdoor heat exchanger
Wash away dust on surface of heat exchanger
Block in air filter
Clean filter
Fan speed was set too low
Set fan speed as high or medium
Fan speed turns lower
Capacitor is damaged
Replace capcitor
Motor is damaged
Replace motor
Mounting position of outdoor unit is inappropriate
Outdoor unit shall be installed in a place with good ventilation
Outdoor temperature is too high
Install proper weather screen; it is suggested to replace air-conditioner unit with one of higher capacity in case the best available cooling effect does not satisfy needs
Indoor space is not sufficiently closed, or people enters or leave the room frequently, or there is heating equipment operating in the room
Keep the indoor space as closed as possible, do not use electrical appliance generating large amount of heat


When air supply mode is selected, the fan does not operate
Indoor fan motor burned out or there is wire breakage or failure of overheating protector
Replace fan motor or components with failure
The internal overheating protector frequently breaks as overheating is caused by abnormity of motor
Replace fan motor
Wrong line connection
Correctly connect lines according to electrical diagram
Open circuit or damage of fan capacitor
Replace it withfan capacitor of the same model and spec
When in cooling or heating mode, compressor operates but outdoor fan does not operate
Outdoor fan motor is damaged
Replace fan motor
Wrong line connection
Correctly connect lines according to electrical diagram
Outdoor fan capacitor is damaged
Replace fan capacitor
When in cooling or heating mode, outdoor fan operates but compressor does not operate
Compressor failure
Replace Compressor
Operating capacitor of compressor is damaged
Replace capacitor
Voltage is too low or too high
It is suggested to equip voltage regulator
Wrong line connection
Correctly connect lines according to electrical diagram
Failure of protector itself
Use universal meter to check if contacts of compressure not overheated are conducting; replace protector in case of non-conducting conditions
Compressor is overheated so protector is activated
Insufficient or too much refrigerant
Adjust refrigerant amount
Capillary is blocked so air intake temperature is too high
Replace capillary
Compressor does not operate smoothly (seized or jammed), air discharge valve is damaged
Replace Compressor
Failure of protector itself
Replace protector
Swing louver does not run
Torque of swing motor is insufficient
Wrong line connection
Controller is damaged (IC2003 is damaged, swing relay cannot close
Fisrtly check if line connections have fault, if no, replace components at failure position



In case of the following protection or failures, the indoor unit shall display corresponding codes, which are explained as follows:

Code	Explanation
E1	Compressor High-pressure Protection
E2	Indoor Antifreeze Protection
E3	Compressor Low-pressure Protection
E4	Exhaust Pipe High-temp. Protection
E5	Low-voltage Protection